CANAL RECORD

VOLUME 4

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INDEX.

A

- ACCIDENTS—
  - Burning, 134, 291, 380.
  - Crane, 251, 365.
  - Drowning, 315.
  - Dynamite, 4, 42, 165, 235, 379.
  - Gasoline, 229.
  - Land Slide, 91.
  - Railroad, 4, 14, 27, 42, 44, 67, 115, 134, 187, 197, 331, 363, 371, 381,.
  - Shooting, 131.
- Accounts—
  - Classified, changes, 6, 224, 280.
  - Panama, water and sewer, 111.
  - *See also* Expenditures.
- Agriculture—
  - Roads an aid, 41.
  - School gardens, 202, 291.
- American Society of Civil Engineers—
  - Visit of members, 223.
- Anchors at Cruces, 277, 314.
- Appropriations Committee, visit, 82.
- Appropriations, 42, 225, 229.
- Arraijan, highway, 76, 225, 290, 345.
- Arrest and bail, 35.
- Artisans, force reduction, 95.
- Atlantic Division—
  - Chief Clerk, Acting, 383.
  - Division Engineer, Acting, 111.
  - Reorganization, 333.
- Automobiles—
  - Chauffeurs license, 347, 355.
  - License, 109, 118.

B

- BAGGAGE on trip passes, 215.
- Baggage and advertising privileges, 375.
- Bail, admission to, 35.
- Balboa—
  - Docks and harbor, 1, 2, 19, 39, 65, 129, 209, 241, 290, 321, 377, 380.
  - Native town, removal, 409.
  - Swamp land, reclaiming, 193, 337.
- Band concerts. *See each issue.*
- Bank robbers, pursuit, 214.
- Barges—
  - Derrick for Colon breakwater, 305, 353.
  - No. 7 ashore on Colon beach, 117, 140.
  - Steel for Atlantic Division, 137.
- Baseball—
  - Batting and team averages, 246.
  - League organized and schedules, 38, 108, 126, 142, 207, 214.
  - Transportation for players, 4.
- Bible Societies, 21.
- Bicycles, license and regulation, 339.
- Biological survey, 145.
- Boilermakers, strike, 97, 105, 129.
- Boilers, efficiency with oil fuel, 33.
- Bones unearthed at Chame, 250.
- Breakwaters—
  - Barges for placing rock, 305.
  - Colon, 69, 155, 170, 218, 257, 385.
  - Cost. *See* Cost statements.
  - Naos Island, 77, 218, 337, 361.
  - *See also* Chairman and Chief Engineer, monthly reports.
- Bridges—
  - Cardenas River, 153.
  - Culebra Cut, 81, 189, 313.
  - Mandingo River, 97.
  - Paraiso, fire, 187.
  - Spillways, 41.
- Buildings—
  - Disposition, 287.
  - Improvements, 34.
  - Notes, 74, 298.
  - Removal, 183.
  - Sale, 7, 70, 296, 306, 375.
- Burglar shot, 53.
- Bushings, manufacture, 328.

C

- CALIFORNIA-ATLANTIC S. S. COMPANY—
  - Freight agreement with Panama railroad, 34, 209, 385, 325.
- Carribbean Coconut Co., claim adjustment, 281.
- Cars—
  - Measurement, 140.
  - French dump, use, 169.
  - Hand and push, color, 335.
  - Mechanical improvements, 141.
  - Steel dump, repairs, 187.
- Castings—
  - Defective, claims, 78.
  - Patterns, 303.
- Cattle plague in Panama, 179.
- Caverns, Chilibre River, 281.
- Cement—
  - Bags returned, 113.
  - Contract with Munson S. S. Line, 74, 377.
  - Deliveries, 129, 201.
  - Iron preservative, 409.
  - Machine for coating surfaces, 305, 355.
- Census of Canal Zone, 380.
- Central Division—
  - Engineer, Acting, 312.
  - General Inspector, appointment, 39.
  - Reorganization, 297.
- Certificates, injury and sick, 224.
- Chagres River—
  - Dump, 25.
  - Freshets, 1, 65, 117, 193, 361.
  - Stages. *See each issue.*
- Chairman and Chief Engineer—
  - Acting, appointment, 47, 183, 319.
  - Reports, monthly, 28, 60, 101, 132, 169, 172, 204, 236, 268, 308, 340, 372, 412.
  - Secretary, appointment, 312.
- Charcoal, proposals, 111, 239, 244.
- Chauffeurs, license, 347, 355.
- Chilibre River caverns, 281.
- Chorrera highway, 225, 290, 345.
- Christmas celebrations, 131, 142.
- Churches—
  - Roman Catholic, 38.
  - Societies, 387.
  - School and orphanage, Colon, 380.
  - *See* each issue.
- Circulars, official—
  - Accounts,
    - Panama water and sewer, 111.
    - Expenditure, changes, 6, 224, 280.
  - Artisans, force reduction, 95.
  - Atlantic Division—
    - Chief Clerk, Acting, 383.
    - Division Engineer, Acting, 111.
  - Baggage on trip passes, 215.
  - Buildings—
    - Leasing, 158, 165, 254, 375, 383, 391, 399.
    - Disposition, 287.
    - Removal, 183.
    - Sale, 7, 70, 296, 306, 375.
  - Bushings, manufacture, 328.
  - Cars, hand and push, 335.
  - Castings—
    - Defective, claims, 78.
- Circulars, official—
    - Patterns, 303.
  - Central Division—
    - Engineer, Acting, 312.
    - General Inspector, appointment, 39.
  - Chairman and Chief Engineer, Acting, 47, 183, 319.
  - Childrens' transportation, 238.
  - Civil Administration, Acting Head, 319.
  - Civil Service examinations, 79.
  - Clearance papers, false, 78.
  - Clerks without knowledge of typewriting, 22.
  - Clubhouses, Superintendent, Acting, 127.
  - Commissary coupon books, 167, 254, 367.
  - Commissary refunds, 191.
  - Coroner's Jury, service on, 16.
  - Costa Rica, vacations, 119.
  - Counsel and Chief Attorney, duties, 62.
  - Criminal Procedure, amendment, 6.
  - Customs duty, forms, 104.
  - Dentists, Commission, 62, 79.
  - Depot Quartermaster, Acting, 55.
  - Docking vessels, charges, 319.
  - Electricity charges, 152, 287, 295.
  - Employes—
    - Designation, 231.
    - Injured, 78, 215, 287, 312.
    - Interchange, 238.
    - Transfer, 391.
    - Transportation, 231, 303.
  - Engineers and conductors—
    - Seniority, 6, 119.
    - Transfer, 95.
  - Envelopes, penalty, misuse, 351.
  - Equipment—
    - Rates for use, 231.
    - Repairs and expenditures, 5, 207, 335.
    - Surveyed and turned in, 78.
    - Transfer, 215, 263.
  - Examiner of Accounts, appointment, 231, 287, 319.
  - Expenditure accounts, classified, 6, 224, 280.
  - Fire Chief, Acting, 55.
  - Floating equipment, inspection, 215.
  - Gravel delivery, 183.
  - Holidays, 6, 78, 104, 136, 207, 254, 312, 319, 343, 415.
  - Hunting on watersheds, 224.
  - Ice for locomotives and steam shovels, 312.
  - Ice orders, 87.
  - Injured employes, 78, 87, 215, 287, 312.
  - Judge, District Court, appointment, 287.
  - Labor and material surcharges, 175.
  - Labor trains—
    - Permits, 328.
    - Warning to passengers, 247.
  - Laborers—
    - Clearance papers, 79.
    - Pay and promotion, 335, 343, 367.
  - Land reservation, 343.
  - Leave, vacation, 95, 127, 175, 179, 183, 287.
    - Injury, 215, 312.
  - Levelman and transitman, examinations, 62.
  - Lidgerwood engineers, rules, 191.
  - Lights in quarters, 191.
  - Local inspectors—
    - Appointments, 70, 111, 359.
    - Inspection of floating equipment, 215.
  - Locomotive engineers and conductors, 6, 119.
  - Locomotives—
    - Flue repairs, 280.
    - French, rate, 391.
  - Lubricants—
    - Issue and use, 127, 152, 191, 351.

- Circulars, official—
  - Lubricants—
    - Monthly report, 139.
  - Machinery and equipment, repair, 5.
  - Manufacturing, monthly reports, 175.
  - Market regulations, 136.
  - Material and supplies, surplus, 62.
  - Mechanical Committee, 280.
  - Mechanical Division—
    - Chief Clerk, Acting, 271.
    - Superintendent, Acting, 62.
  - Mechanics, temporary service, 79.
  - Medical examination, applicants, 328.
  - Money orders for Costa Rica, 247.
  - Organization changes, 254.
  - Pacific Division—
    - Engineer, Acting, 22.
    - Resident Engineer, Acting, 111.
  - Panama railroad. *See* Panama railroad.
  - Patterns—
    - Castings, 303.
    - Cost, 295.
    - Return, 136.
  - Pay car schedule, 280.
  - Pay certificate signatures, 367.
  - Pay increases, 254.
  - Photographs and blue prints, 247.
  - Planing mill work, 247.
  - Police, Acting Chief, 136.
  - Profane language, 399.
  - Property—
    - Sale, 375.
    - Surveyed, disposition, 224.
  - Purchasing Agent, Acting, 55.
  - Quartermaster's shops, private work, 55.
  - Quarters—
    - Family, occupation, 16.
    - Non-housekeeping, 328.
  - Ratings and rates of pay, 47, 55, 136, 139, 247, 254, 375, 415.
  - Rations, prices, 247.
  - Repairs to vessels and equipment, 5, 207.
  - Rolling stock, transfer, 70.
  - Sand and stone, prices, 231.
  - Sanitary Officer, Acting Chief, 55, 303.
  - Scales, inspection and adjustment, 224.
  - School holidays, 127.
  - Scrap, Decauville material, 231.
  - Secretary to Chairman, Acting, 312.
  - Shops—
    - Cocoli closed, 16.
    - Expense percentage, 295.
    - Force reduction, 247.
    - Inspector, duties, 152.
    - Manufacture of material, 152.
    - Patterns, 136, 295, 303.
    - Planing mill work, 247.
    - Rules, 183.
    - Standardizing practices, 280.
    - Tool rooms, 6.
    - Transfer, 263.
  - Sidewalks, construction and repair, 95.
  - Slaughter of animals for food, 271.
  - Spare parts and material, 247.
  - Stationery, standardization, 191, 199.
  - Steamship transportation requests, 335.
  - Steam shovel cranemen, promotion, 287.
  - Steerage rate on steamships, 22.
  - Stopover on trip tickets, 215.
  - Stores, reduction of stock, 159.
  - Subsistence Officer, Acting, 280.
  - Supplies for Canal work. *See each issue.*
  - Surcharges, labor and material, 175, 328.
  - Telephone exchange, Culebra, 55.
  - Third Division, Acting Engineer, 31.
  - Tivoli Hotel, rates and rules, 87.
  - Track shifters, conductors, 104.
  - Trails, contract for clearing, 87.
  - Trains, special, 27, 254.
  - Transportation Committee, recommendations, 22.
  - Transportation for employes, 231, 303.
  - Traveling Engineers, appointment and duties, 127, 152, 399.
  - Tugs, use, 359.
  - Typewriter repairs, 95.
  - Visitors, inspection of Canal, 271.
  - Waste, cotton, 95.
- Circulars, official—
  - Water—
    - Drinking, 207, 391.
    - Restrictions, 167, 312.
  - Water and sewer accounts, 111.
  - Watersheds, hunting prohibited, 224.
  - Wireless stations, working hours, 175.
  - Work, unsatisfactory, report, 271.
  - Work requests, 247, 295.
- Civil Administration, Acting Head, 319.
  - *See also* Chairman and Chief Engineer, monthly reports.
- Civil Engineers, American Society—
  - Visit of members, 203.
- Civil Service—
  - Clerks without knowledge of typewriting, 22.
  - Examinations—
    - Announcements, 4, 13, 39, 45, 46, 62, 76, 90, 109, 114, 123, 125, 189, 197, 203, 229, 267, 322, 357, 398.
    - Cards for admission, 275.
    - Not official business, 79.
  - Petition of employes, 139.
  - Politics, participation, 67.
  - Transfer to States, 45.
- Clearance papers, false, 78.
- Clerks without knowledge of typewriting, 22.
- Clubhouses, Commission—
  - Corozal, 49, 73, 173, 105.
  - Report, annual, 68.
  - Superintendent, Acting, 127.
  - *See each issue.*
- Coach tariff, 139, 151, 278, Part 2 No. 36.
- Coal—
  - Contract let, 377.
  - Prices, 304, 312.
  - Screen at storage piles, 235.
- Cocoli Lake pumping plant and water supply, 181, 223, 233, 353.
- Cocoli shops closed, 16, 27.
- Coconut grove, Caribbean, claim adjustment, 281.
- Cold storage. *See* Commissary.
- Colon—
  - Fire, loss and relief measures, 243, 251, 262, 324.
  - Fireproof construction, 235, 249.
  - Garbage disposal, 11, 82.
  - Health educational work, 189, 245, 321, 371.
  - Improvements, 54, 73.
  - Storm sewer, 161.
  - *See also* Panama Republic.
- Commissary—
  - Cakes, Thanksgiving, 79.
  - Christmas goods, 114.
  - Cold storage plant, improvements, 331.
  - Cold storage prices. *See each issue.*
  - Cook books, 79.
  - Coupon books, 167, 254, 267, 367, 402.
  - Embezzlement of stores, 125, 140, 155, 171.
  - Laundry, 386.
  - Miraflores opened, 113.
  - Price reduction, 201.
  - Refunds, 191.
  - Report, fiscal year, 53.
  - Train, transportation on, 313.
- Compressed air leakage, 361.
- Comptroller of Currency, liquidated damages, 22.
- Concrete—
  - Cost. *See* Cost statements.
  - Culebra Cut, 9, 41, 129, 355, 377.
  - Ditching, 345.
  - Handling and mixing plant, 9, 34, 148–150, 282.
  - Locks. See totals.
  - Mixer record, 194.
  - Mixers, additional, 362.
  - Piles, cost, Part 2, No. 50.
  - Piles in guide walls, 122, 217.
  - Spraying machine, 305, 355.
  - Totals, Locks and dams—
    - Monthly, 20, 52, 92, 124, 164, 222, 260, 292, 332, 361, 364, 404.
    - Weekly. *See each issue.*
  - *See also* Chairman and Chief Engineer, monthly reports.
- Conductors, transfer, 95.
- Congress—
  - Canal legislation, 349, 378, 385.
  - Committees and members, visits, 82, 103, 211, 234.
- Construction and Engineering Department—
  - *See* Chairman and Chief Engineer, monthly reports.
- Contracts, liquidated damages, 22.
- Coronor's Jury, service on, 16.
- Corrals—
  - Building at Miraflores, 137.
  - Calfalfa for feeding, 33.
  - Panama railroad, widening stalls, 369.
- Cost statements, 81, 84, 89, 93, 281, Part 2, No23, 36, 50.
  - *See also* Expenditures.
- Costa Rica—
  - Money order convention, 245, 247.
  - Quarantine regulations, 245.
  - Vacations in, 119.
- Counsel and Chief Attorney, duties, 62.
- Coupon books, commissary and hotel, 167, 254, 267, 367, 402.
- Criminal Procedure, amendment, 6.
- Cristobal, traffic regulations near schools, 76.
- Cruces anchors, 277, 314.
- Cucaracha. *See* Culebra Cut slides.
- Culebra Colored Association, 123.
- Culebra Cut—
  - Blasting, effect on slides, 233.
  - Bridge across, 81, 189, 313,
  - Concrete work and plant, 9, 41, 129, 355, 377.
  - Drainage, 162, 273, 297, 361.
  - Excavation records, 89, 121, 329, 357, 393.
    - *See also* Excavation totals.
  - Geology, 81, 115.
  - Grass to prevent erosion, 345, 351.
  - Observation platform, 209.
  - Profile and cross sections, 293, 357.
  - Railroad accident, 363.
  - Revetment, 116, 355, 377.
  - Slides, 25, 49, 65, 89, 169, 193, 233, 297, 337, 361, 381, 377.
  - Station boards, 356.
  - Spoil transportation, 18, 140, 353, 409.
- Curundu River diversion, 379.
- Customs—
  - Information, 104, 315, 390.
  - Panama, increase, 179.

D

- DAMAGES, liquidated, 22.
- Dams—
  - Concrete. *See* Concrete totals.
  - Cost. *See* Cost statements.
  - Emergency, 220, 305.
  - Fill placed, monthly, 17, 20, 49, 52, 89, 92, 121, 124, 161, 164, 185, 188, 189, 217, 222, 257, 260, 289, 292, 329, 332, 361, 364, 401, 404.
  - Gatun—
    - Hydraulic fill, 58, 97, 189.
    - Model, 242.
    - Progress, 219.
  - Spillways. *See* Spillways.
  - *See also* Chairman and Chief Engineer, monthly reports.
- Deeds, executing and recording, 212.
- Dentists, district, 62, 79.
- Deportation, penalty for return, 301.
- Depot Quartermaster, Acting, 55.
- Directory, Canal and Panama officials, 8, 160, 248, 360.
- Distillation tax, 315, 347.
- Ditching machine for railroad relocation, 105.
- Diversion channels, 25, 379.
- Docking vessels, charges, 319.
- Docks and harbors—
  - Atlantic terminal, 73, 129, 316, 369, 401.
  - Balboa terminal, 1, 19, 65, 129, 209, 241, 290, 377, 380.
  - Collapse of No. 4 at Colon, 83.
  - Lumber at Balboa, 81, 89, 321.
  - Porto Bello, 330.
- Drainage—
  - Culebra Cut, 162, 273, 361.
  - River diversion, 25, 379.
- Dredges—
  - Atlantic entrance work, 81, 218, 233, 258.
  - French on bank of Chagres, 89.
  - French, scrapped, 161.
  - Ladder, records, 145, 154, 185.

- Dredges—
  - Pacific entrance work, 81, 138, 169, 209, 217, 265.
  - Sunken, 369.
- Drinking cups on trains, 393.
- Drowning at Toro Point, 315.
- Dry Dock. See Marine Shops.
- Dumps—
  - Tabernilla, 51, 161.
  - Track shifters, record, 227.
  - *See also* Unloader records, 227
- Dynamite—
  - Estimate and bids, 249, 321.
  - Explosions, premature, 4, 42, 165, 235, 379.
  - Records, monthly, 97, 169.
  - Shipments received, 353.

E

- EARTHQUAKES, 137.
- Electric street railway, 157.
- Electricity—
  - Charges to Departments, 152, 287, 295.
  - Plant at Balboa, 226.
- Embezzlement, 125, 140, 155, 171, 187, 197.
- Employment, notice, 122, 155.
- Employes—
  - Clearance papers, 79.
  - Designation, 231.
  - Disabled and indigent, 78, 301.
  - Injured, 77, 78, 215, 287, 312, 357.
  - Leaves. *See* Leaves.
  - Organizations, time served, 104.
  - Petitions to the President, 97, 138, 211, 220, 243.
  - Physical examinations, 342, 348.
  - Promotions, 3.
  - Ratings and rates of pay, 47, 55, 136, 139, 247, 254, 375, 415.
  - Transfer, 45, 391.
  - Transportation, official, 231, 303.
- Engineer Lieutenants, instruction, 106.
- Engineering positions, promotions, 3.
- Engineers and conductors, seniority, 6, 95, 119.
- Engineers, locomotive, case of M. H. Lough, 211, 220, 243.
- Envelopes, penalty, misuse, 351.
- Equipment—
  - Rates between divisions, 231.
  - Repair and expenditures, 5, 207, 335.
  - Transfer, 215, 263, 305.
- Estate, Gregorio Perez, 230, 238, 246.
- Examinations, physical, 342, 348.
  - Civil Service. *See* Civil Service.
- Examiner of Accounts, appointment, 231, 287, 319.
- Excavation—
  - Atlantic Division. *See* Excavation tables.
    - *See also* Dredging.
  - Bas Obispo, cross section, 357.
  - Car measurements, 140.
  - Central Division—
    - Culebra Cut, profile and cross sections, 293, 357.
    - Records—
      - Daily, 19, 25, 33, 49, 65, 89, 97, 137, 165, 195, 225, 233, 273, 313, 329, 393.
      - Monthly, 9, 41, 153, 186, 217, 249, 353,
    - Steam shovels, monthly, 19, 51, 107, 123, 179, 195, 227, 259, 291, 331, 363, 398.
    - *See also* Excavation tables.
  - Chagres section, 225, 273.
  - Contract, 113, 130, 329.
  - Cost. *See* Cost statements.
  - Dredging. *See* Dredges.
  - Estimate revised, 377, 381.
  - Gatun Lake, 45, 97, 225, 273.
  - Hydraulic, 12, 26, 73, 185, 219, 337.
  - Mindi, 75, 129, 153, 185, 201, 305, 377.
  - Pacific Division. *See* Excavation tables.
    - *See also* Dredges.
  - Panama railroad relocation—
    - Contract, 177, 401.
    - Cost, 76.
    - Records, 10, 67, 107, 227, 265, 291, 338, 363, 398, 409.
  - Proposals, 83, 96, 104, 110, 118, 127, 151, 157.
  - Steam shovel. *See* Steam shovel.
  - Tables—
    - Monthly, 17, 49, 89, 121, 161, 185, 217, 257, 289, 329, 361, 401.
- Excavation—
  - **Tables—**
    - Monthly since American occupation, 20, 52, 92, 124, 164, 188, 222, 260, 292, 332, 364, 404.
  - Transportation equipment, 196.
  - *See also* Chairman and Chief Engineer, monthly report.
- Executive Orders—
  - Customs, Panama, increase, 179.
  - Deeds, executing and recording, 212.
  - Deportation, penalty for return, 301.
  - Distillation tax, 315, 347.
  - Fights between animals, 411.
  - French dump cars, use, 179.
  - Insane Asylum, government, 323.
  - Judicial appointments, 251.
  - Land office created, 187, 297.
  - Land leases, 77.
  - Lots in townships, licenses, 371.
  - Railway trains, boarding, 315.
  - Real estate conveyances, 14.
  - Seamen, deserting, 307.
  - Taxes, collection, 58.
  - Transfer of employes to States, 45.
  - Vessels, steam, isnpection, 405.
- Expenditures—
  - Accounts, changes, 6, 224, 280.
  - Classified, monthly statements, 10, 69, 109, 135, 163, 197, 230, 263, 318, 333, 375, 400.
  - *See also* Cost statements.
- Explosives. *See* Dynamite.
- Extradition to Canal Zone, 210.

F

- FIGHTS between animals, 411.
- Filter plant, Gatun, 121, 201, 353.
- *Finance*, S. S. loss claims, 242, 285.
- Fire—
  - Bas Obispo, 291.
  - Colon, loss and relief measures, 243, 251, 262, 324.
  - Paraiso bridge, 187.
  - Stations, 130, 177, 249.
  - Water supply, 345.
- Fire Protection, Division—
  - Chief, Acting, 55.
  - Rules and regulations, 243, 333.
- Fish survey, 42.
- Flamenco Island—
  - Launch service, 403.
  - Transfer of Pacific Mail interest, 388.
- Floating equipment, inspection, 215.
- Fortification appropriations, 225.
- Foundry. *See* Shops.
- Fourth of July, observance, 294, 299, 311, 324, 334, 339, 350, 366, 394.
- Freight—
  - Agreement with carriers, 34, 209, 285, 325.
  - Handling at terminals, 129.
  - *See also* Docks.
- French property valuation, 291, 317.
- Freshets, 1, 65, 117, 193, 361.

G

- GARBAGE, disposal, 11, 82.
- Gates, lock. See Locks.
- Gatun Lake—
  - Excavation, 45, 97, 225, 273.
  - Land claims, adjustment, 65.
  - Removal of buildings, 410.
  - Villages exposed to floods, 1.
- Gatun River, transportation, 193.
- Geology study, 81, 115.
- Gravel delivery, 183, 249.
- Guatemala, vacations in, 41, 58.

H

- HAMBURG-AMERICAN S. S. CO.—
  - Reduced rate for students, 301.
  - Sailings. *See each issue.*
  - Service, 4, 77, 142, 245.
- Harbors and docks—
  - Atlantic entrance, 73, 129, 316, 369, 401.
  - Balboa, 1, 19, 65, 129, 209, 241, 290, 377, 380.
  - *See also* Chairman and Chief Engineer, monthly reports.
- Highways—
  - Arraijan and Chorrera, 225, 290, 345.
    - Bas Obispo Marine Corps, 345.
- Highways—
  - Panama to Gorgona, 9, 25, 97, 153, 225, 245, 290, 345.
- Holidays, 6, 78, 104, 127, 136, 207, 254, 312, 319, 343, 415.
- Homicide cases, 355.
- Horses, infectious disease, 325.
- Hospital, Ancon—
  - Poultry farm, 411.
  - Records, 406.
- Hostling locomotives, cost, 346.
- Hotels—
  - Coupon books, 167, 254, 267, 367, 402.
  - Culebra, removal, 193.
  - Panama railroad in Colon, 249.
  - Report, annual, 36.
  - Tivioli, 87, 244, 385.
  - Washington, 57, 306, 396.
- Hunting on watersheds, 224, 307.

I

- ICE—
  - Locomotives and steam shovels, 312.
  - Orders, 87.
- Incinerator plants, garbage disposal, 11.
- Infant mortality, 189, 245, 321.
- Injured employes. See Employes.
- Insane Asylum government, 323.
- Insurance, Panama railroad, 301.
- Intercolonial Club for negroes, 243.
- Islands, Panama Bay, transfer of Pacific Mail interest, 388.

J

- JAPANESE CRUISERS, visit, 154.
- Judiciary appointments, 235, 251, 287.

K

- KANGAROOS, Memorial Services, 108.

L

- LABOR—
  - Force and quarters, monthly reports, 2, 35, 66, 107, 139, 165, 212, 244, 275, 315, 331, 379, 406.
  - Recruiting prohibited, 146.
- Labor Day, 6, 415.
- Labor train—
  - Accident, 187.
  - Permits, 328.
  - Safety measures, 189, 247.
- Laborers—
  - Clearance papers, 79.
  - Injured, barracks, 81.
  - Meals, 241, 247.
  - Passports for deck passengers, 106.
  - Physical examination, 342, 348.
  - Pay and promotion, 335, 343, 367.
- Lands—
  - Claim adjustment, 65.
  - Conveyances, 14.
  - Leasing, rules and regulations, 77.
  - License for lots, 371.
  - Office authorized, 187, 297.
  - Panama railroad, 49, 389.
  - Reservation for Canal work, 343.
  - Survey, 3, 252.
  - Transfer of Pacific Mail interests, 388.
- Laundry—
  - Ancon, electric flat irons, 362.
  - Panama railroad, 386.
- Law, Department—
  - Counsel and Chief Attorney, duties, 62.
  - Land office, 187, 297.
- Lawn tennis tournaments, 157, 189, 228, 243, 251, 299, 334, 348.
- Laws—
  - Criminal Procedure, amendment, 6.
  - Navigation, Part 2, No.21.
  - White Slave, 35.
  - *See also* Executive Orders.
  - *See also* Ordinances.
- Leave—
  - Injury 215, 312.
  - Vacation, 1, 95, 105, 116, 127, 175, 179, 183, 287.
- Letters, misdirected. *See each issue.*
- Levelmen and transitman, examination, 62, 77, 125, 357.
- Lidgerwood engineers, rules, 191.

- Lighthouses and aids to navigation, 121, 265, 338, 353, 356, 363.
- Lights in quarters, 191.
- Liquor licenses—
  - Applications granted, 21, 336.
  - Saloon areas, 286.
- Local Inspectors, Board—
  - Appointments, 70, 111, 359.
  - Meetings, 266, 301, 322, 347, 378, 381, 415, 411.
  - Steamship inspection, 215, 405.
- Locks—
  - Bridges, intake, 385.
  - Concrete—
    - Piling, 122, 217.
    - Statements, monthly, 20, 52, 92, 124, 164, 188, 222, 260, 292, 332, 364, 404.
    - Statements, weekly. *See each issue.*
    - Cost. *See* Cost statements.
  - Culvert forms, 41, 273.
  - Dams, emergency, 220, 305.
  - Excavation. *See* Excavation tables.
  - Gates—
    - Construction work, 105, 113, 153, 185, 201 233, 289, 329.
    - Operating machinery, 276-7, 337.
  - Gatun—
    - Cableway withdrawn, 333.
    - Coffer dam, 369.
    - Excavation in approach, 153, 219, 329. *See also* Excavation tables.
    - Guide walls, 122, 217.
    - Progress. See each issue.
    - Slide, 91, 201, 233.
  - Miraflores—
    - Air compressor, 379.
    - Concrete mixers, additional, 362.
    - Construction plant, 148-50, 282.
    - Culvert forms, 41, 273.
    - Flooded, 313.
    - Guide wall, 409.
    - Hydraulic excavation, 12, 26, 73, 185, 219.
    - Progress. *See each issue.*
  - Model, 242.
  - Pedro Miguel—
    - Construction plant, 148-50, 321.
    - Crane, berm, dismantling, 145, 177, 321.
    - Flooded, 117.
    - Progress. *See each issue.*
  - Towing machines, 113, 385.
  - Valve machinery, 33, 125, 219, 257, 393, 395.
  - Water pressure, 197.
  - *See also* Chairman and Chief Engineer, monthly reports.
- Locomotives—
  - Engineers, and conductors, seniority, 6, 119.
  - Flue repairs, 280.
  - French, rate, 391.
  - Hostling cost, 346.
- Lubricants—
  - Consumption, reduction, 165.
  - Contract let, 377.
  - Issue and use, 127, 152, 191, 351.
  - Reports, monthly, 139.
- Lumber—
  - Bids rejected, 114.
  - Dock at Balboa, 81, 89, 321.
  - Proposals, 64, 69.
  - Shipments received, 2, 18.

M

- MACHINERY AND EQUIPMENT, manufacture and repairs, 5.
- Mandingo River bridge, 97.
- Manslaughter, 53, 59, 83, 211, 220, 243.
- Manufacturing report, 175.
- Map, Panama railroad, 305.
- Marine Corps, directory of officers, 248.
- Marine Shops—
  - Balboa, 2, 39, 89, 138, 265, 321.
  - Cristobal, 305, 316, 353.
- Material and supplies—
  - Condemned, 17.
  - Surplus, 62.
  - Useless, sale, 285.
- Meals for laborers, 241, 247.
- Mechanical Committee, 280.
- Mechanical Division—
  - Chief Clerk, Acting, 271.
  - Shops. *See* Shops.
  - Superintendent, Acting, 62.
- Mechanical improvements, 141.
- Mechanics, temporary service, 79.
- Medals and service bars, 1, 253, 261, 274, 284, 289, 300, 349.
- Medical examinations, 328, 342, 348.
- Memorial Day, observance, 283, 299, 307, 326.
- Mining Engineers, American Institute—
  - Visit of members, 75, 82.
- Miraflores Lake, spillway, 36.
- Money orders—
  - Costa Rica, convention, 245, 247.
  - Reports, monthly, 18, 68, 109, 140, 178, 195, 229, 270, 301, 349, 380.
- Monotype equipment, printing plant, 14.
- Mosquito pest, 307.
- Motors—
  - Observation car for visitors, 297.
  - Repair shop at Culebra, 301.

N

- NAOS ISLAND—
  - Breakwater, 77, 218, 337, 361.
  - Transfer of Pacific Mail interest, 388.
- Navigation—
  - Aids, 121, 265, 338, 353, 356, 363.
  - Laws, Part 2, No. 21.
- Nombre de Dios, wrecks unearthed, 54, 313.
- Nursing, District, Colon, 189, 245, 321.

O

- OBISPO DIVERSION, concrete flume, 145.
- Obituary—
  - Alleman, L. H., 179.
  - Allison, E. H., 203.
  - Blair, John C., 411.
  - Brady, W. H. H., 140.
  - Bremner, Fleming, 147.
  - Brown, John Fremont, 381.
  - Callahan, Mrs. Margaret, 228.
  - Clark, Mrs. E. B., 228.
  - Cleary, J. R., 244.
  - Coit, John J., 27.
  - Corse, Wm. B., 259.
  - Crawford, John, 147.
  - Cuvillier, Charles Matthew, 244.
  - Dabbs, John S., 147.
  - Davis, James F., 134.
  - Day, Henry G., 203.
  - Dennis, L. R., 349.
  - Drake, Mrs. Edwin P., 371.
  - Elsey, John T., 403.
  - Evans, J. D., 134.
  - Frank, Edwin E., 163.
  - Gey, Marie Emile Pierre, 363.
  - Gibson, Mrs. Lillie, 228.
  - Guertler, Charles, 371.
  - Holstead, W. S., 59.
  - Hammond, Captain Edwin, 349.
  - Harlow, James B., 301.
  - Harrington, William T., 21.
  - Hartson, Mildred, 251.
  - Haven, Fred B., 35.
  - Hobrough, John M., 229, 235.
  - Holland, Daniel, 294.
  - Kent, Mary Enola, 324.
  - Kreiter, James Monroe, 411.
  - LaRue, Alex., 197.
  - Lentin, Gerhard, 21.
  - Logan, A. C., 179.
  - Lynch, James, 66.
  - McArthur, Semore, 411.
  - McGraw, Mrs. Daniel, 228.
  - Massi, Rev. Father Pius, 37.
  - Mealey, Robert, 349.
  - Murphy, A. R., 115.
  - Notte, John S., 267.
  - O'Neil, Ambrose, 315.
  - Payne, Mrs. John Scott, 403.
  - Penney, H. H., 381.
  - Sapusnik, Mrs. Rose, 76.
  - Schaberle, John A., 59.
  - Schofield, R. H., 318.
  - Shackleton, Mrs. Wm., 235.
- Obituary—
  - Shaler, Colonel J. R., 27.
  - Siegle, William, 35.
  - Simmons, David C., 147.
  - Skipper, William A., 301.
  - Smith, Mrs. Richard C., 134.
  - Sobey, Rev. Joshua Heath, 107.
  - Strobridge, Mrs. Lavinia, 211.
  - White, Louis R., 171.
  - Woodburn, Mrs. Effie M., 134.
- Observation car for visitors, 297.
- Officials, Canal and Panama, directory, 8, 160, 248, 360.
- Oil—
  - Fuel—
    - Agreement with Union Oil Co., 241.
    - Boiler efficiency, 33.
    - Consumption, 241, 345.
  - Lubricating—
    - Consumption, 165.
    - Contract let, 377.
    - Issue and use, 127, 152, 191, 351.
    - Reports, 139.
- Ordinances—
  - Automobile licenses, 109, 118.
  - Bicycle license and regulations, 339.
  - Chauffeur licenses, 347.
  - Coach hire rates, 139, 151, 278, Part 2, No. 36.
  - Fire protection, rules and regulations, 243, 333.
  - Hunting and trespassing on watersheds, 307.
- Organization changes, 254.

P

- PACIFIC DIVISION—
  - Engineer, Acting, 22.
  - Organization, changes, 266.
  - Telephone service, 73.
- Pacific Mail Steamship Co—
  - Freight agreement with Panama railroad, 34, 209, 285, 325.
  - Freight service, 67.
  - Transfer of interest in islands, 388.
- Pacific Steam Navigation Co., rates to South Amercia, 380.
- Panama-David railroad survey, 49, 105.
- Panama railroad—
  - Accidents, 4, 27, 42, 44, 67, 115, 134, 187, 197, 331, 363, 371, 381.
  - Apartment house, 305.
  - Auditor, local, appointment, 280, 335.
  - Baggage and advertising privileges, 375.
  - Coal, prices, 304, 312.
  - Commissary. *See* Commissary.
  - Corral, widening stalls, 369.
  - Dispatcher, Chief, appointment, 22, 319.
  - Drinking cups on trains, 393.
  - Earnings, fiscal year, 213.
  - Election of directors and officers, 374.
  - Freight agreement with carriers, 34, 209, 285, 325.
  - Freight handling improvements, 129.
  - Gravel for construction work, 249.
  - Hotels in Colon, 249, 306, 396.
  - Information for travelers, 155.
  - Injunction against, application, 371, 380, 388.
  - Injury pay for employes, 357.
  - Insurance, 301.
  - Interlocking plant at Mt. Hope, 170.
  - Invoices, surcharge, 175.
  - Land claims, 65, 388.
  - Lands, 49, 389.
  - Laundry, 386.
  - Paraiso station discontinued, 87.
  - Parlor car service, 129.
  - Pilot boat, 49.
  - Relocation—
    - Engineer, Acting, 247.
    - Ditching machine, 105.
    - Dynamite explosion, 42.
    - Excavation—
      - Contract, 177, 401.
      - Cost, 76.
      - Records, 10, 67, 107, 227, 265, 291, 338, 363, 398, 409.
    - Gatun to Pedro Miguel, 121, 137.
    - Track material, 385.
    - *See also* Chairman and Chief Engineer, monthly reports.

- Panama railroad—
  - Rolling stock, transfer, 70.
  - Schedule of trains during floods, 62.
  - Special trains, 27, 254.
  - Stations, 39, 87.
  - Steamship repairs, 233.
  - Steerage rates on steamships, 22.
  - Stopover on trip tickets, 215.
  - Stores, consolidation, 147.
  - Superintendent, General, Acting, 31.
  - Ties, hardwood, 369.
  - Timetables, 26, 31, 143, 162, 239, 250, 255, 350, 382, 388.
  - Traffic, agreement with carriers, 209, 285, 325.
- Panama City—
  - Electric street railway, 157.
  - Garbage disposal, 11, 82.
  - Improvements, Panama and Colon, 41, 44, 54, 57, 73, 113, 161.
  - Injured Americans, 77.
  - Roof gutters, defective, 75.
  - Sewer, storm, 41, 161.
  - Water—
    - Accounts, 111.
    - Regulations, 209.
    - Supply, 223, 233, 363.
- Panama Republic—
  - Customs increase 179.
  - Lighthouses and aids to navigation, 265, 338, 356, 363.
  - *See also* Colon.
- Passports for deck passengers, 106.
- Patterns, 136, 295, 303.
- Pay car schedule, 280.
- Pay certificate signatures, 367.
- Petitions, employes, 97, 138, 211, 220, 243.
- Photographs and blue prints, 247.
- Pilot boat, Panama railroad, 49.
- Piles—
  - Concrete, cost, Part 2, No. 50.
  - Lock guide walls, 122, 217.
- Planing mill work, 247.
- Poisoning, ptomaine at mess, 11.
- Police, Chief, Acting, 136.
- Policeman accidentally shot, 131.
- Police stations, additional, 178.
- Politics, participation, 67.
- Postmaster absconds, 155, 187, 197.
- Posts, Customs and Revenues, report, 43.
- Poultry farm, Ancon Hospital, 411.
- Power plant condensers, 1.
- Printing plant, monotype equipment, 14.
- Prisoners, penitentiary, 67, 326.
- Profane language, 399.
- Property—
  - Deeds, executing and recording, 212.
  - Sale, 375.
  - Surveyed, disposition, 224.
- Public Works, Superintendent, appointment, 244.
- Pumping plants, 1, 181.
- Purchasing Agent, appointments, 55, 177.

Q

- QUARANTINE REGULATIONS, 245.
- Quarantine station, Colon, 393.
- Quarry—
  - Ancon, 4, 123, 379.
  - Cost of stone production. *See* Cost statements.
  - Porto Bello, 14, 385.
  - *See also* Rock crushers.
- Quartermaster's Department—
  - Depot Quartermaster, Acting, 55.
  - Purchasing Agent, Acting, 55, 177.
- Quarters—
  - Family—
    - Applications, 38, 78, 111, 135, 198, 230, 274, 318, 351, 375, 407.
    - Occupation, 16.
  - Nonhousekeeping, 328.
  - Reports, monthly, 328.

R

- RAINFALL—
  - Freshets, 1, 65, 117, 193, 363.
  - Records—
    - Monthly, 15, 54, 111, 115, 158, 175, 191, 240, 263, 295, 328, 399.
    - Yearly, 1910, 215.
- Rainfall—
  - *See also* each issue.
  - *See also* Weather reports.
- Ratings and rates of pay, 47, 55, 136, 139, 247, 254, 375, 415.
- Rations, prices, 247.
- Real estate—
  - Conveyances, 14.
  - Deeds, executing and recording, 212.
  - Taxes, collection, 58.
- Recommendations, forged, 145.
- Recruiting labor prohibited, 146.
- Red Cross—
  - Chinese chapter's work, 259.
  - Colon fire relief work, 243, 262, 324.
  - Election of officers, 126.
  - Endowment fund, 235.
  - Financial statements, 13, 54, 110, 125, 163, 190, 235, 263, 299, 334, 366.
  - Notices, 70, 190, 195, 203, 211, 339, 382.
- Relocation, Panama railroad. *See* Panama railroad.
- Reservoirs. *See* Water supply.
- Revenues, monthly reports, 18, 68, 109, 140, 178, 195, 229, 270, 301, 349, 380.
- Rio Grande diversion channel, 25.
- Roads. *See* Highways.
- Rock crushers—
  - Ancon, 123.
  - Cost. *See* Cost statements.
  - Porto Bello, 74, 201, 223, 330.
  - Reports, weekly. *See each issue.*
  - *See also* Chairman and Chief Engineer, monthly reports.
- Rodmen and levelmen, examinations, 62, 77, 125, 357.
- Rolling stock, transfer, 70.
- Roof gutters, defective, 75.
- Roosevelt, Theodore, extract from speech, 21.

S

- SALOONS—
  - Areas, 286.
  - Licenses granted, 21, 336.
- Salvation Army Institute, 326.
- Sand—
  - Cost. *See* Cost statements.
  - Nombre de Dios output, 74, 219, 259.
  - Shipments, monthly, Balboa, 14, 51, 109, 136, 187, 223, 251, 291, 322, 354, 407.
  - Prices, 231.
- Sanitation, Department—
  - Organization changes, 402.
  - Sanitary Officer, Acting Chief, 55, 303.
- Savings bank for West Indians, 228.
- Scales, inspection and adjustment, 224.
- Schools—
  - Attendance, 54, 125, 202.
  - Buildings, 18, 77, 105, 137, 189.
  - College entrance examinations, 274.
  - Colored, 163.
  - Examination for teachers, 19, 103, 301.
  - Gardens, 202, 291.
  - High school commencement, 348.
  - Holidays, 127.
  - Medical inspection, 209, 285.
  - Opening, 18, 26, 39, 54.
  - Teachers, assignment, 26, 202.
  - Teachers meeting, 39, 163.
  - Vacation, 334, 371.
- Scrap, French, 145, 231, 381, 410.
- Seamen, deserting, arrest and discharge, 307.
- Secretary of War, visit, 369.
- Seismograph station at Gatun, 177.
- Seven Years of Canal Construction, 293.
- Shipways, Balboa. *See* Marine Shops.
- Shops—
  - Cocoli closed, 16, 27.
  - Coupon books, cash sale, 267, 402.
  - Expense percentage, 295.
  - Force reduction, 247.
  - Gorgona—
    - Bushings, manufacture, 328.
    - Car repairs, 333.
    - Castings, defective, 78.
    - Equipment, new, 65.
    - Foundry, 139, 170, 333.
    - Inspection car and lifting magnet, 229.
    - Manufacture of material, 152.
    - Order system, 57.
- Shops—
  - Gorgona—
    - Planing mill work, 247.
    - Sand blast cleaning, 333.
    - Tin and pipe shop, 114.
    - Welding, Thermit, 73.
    - Work increase, 27.
  - Inspector, duties, 152.
  - Mechanics, temporary service, 79.
  - Patterns, return and cost, 136, 295.
  - Rules governing employes, 183.
  - Standardizing methods, 280.
  - Steel casting plant, 265.
  - Tool rooms, 6.
  - Transfer to Mechanical Division, 27, 263.
- Sidewalks, construction and repair, 95, 249.
- Six-Year employes, society, 395, 403.
- Slaughter of animals for food, 271.
- Slides—
  - Bas Obispo rock, 41.
  - Blasting effect, 233.
  - Culebra Cut, 25, 49, 65, 89, 169, 193, 281, 337, 361, 377, 381.
  - Estimate of material, 377, 381.
  - Gatun locks, 91.
  - Geologic study, 81, 115.
  - Las Cascadas, 137.
  - Paraiso, 220.
- Social life. *See each issue.*
- Spillways—
  - Bridges across, 41.
  - Concrete laid—
    - Monthly, 20, 52, 92, 124, 164, 188, 222, 260, 292, 332, 364.
    - Weekly, *See each issue.*
  - Cost. *See* Cost statements.
  - Gates, bridges and caissons, 365, 393.
  - Miraflores, plans, 36-37.
  - *See also* Chairman and Chief Engineer, monthly reports.
- Spoil transportation, 18, 140, 196, 353, 409.
  - *See also* Dumps.
- Spreaders, spoil, improvements, 141.
- Stamps, postage—
    - New issue, 194.
    - Sale, monthly reports, 18, 68, 109, 140, 178, 195, 229, 270, 301, 349, 380.
- Stationery, standardization, 191, 199.
- Steamships—
  - Arrivial, information, 267.
  - California-Atlantic Co. *See* California-Atlantic Co.
  - *Finance*, loss claims, 242, 285.
  - Hamburg-American. *See* Hamburg-American.
  - Inspection, 215, 405.
  - Pacific-Mail. *See* Pacific Mail.
  - Rates, employes, 303, 335, 380.
  - Repairs, 233.
  - Sailings. *See each issue.*
  - Steerage rate, 22.
- Steam shovel—
  - Dipper trip, invention, 283.
  - Panama railroad, records, 10, 67, 107, 227, 259, 265, 291, 338, 363, 398, 409.
  - Records—
    - Daily, 19, 25, 33, 49, 65, 89, 97, 129, 137, 165, 195, 225, 233, 273, 313, 393.
    - Monthly, 19, 51, 107, 123, 179, 195, 227, 259, 291, 331, 363, 398.
    - *See also* Excavation tables.
  - Repairs, cost, 242.
- Steel casting plant, 265.
- Stimson, Henry L., Secretary War, visit, 369.
- Stone—
  - Cost of production. *See* Cost statements.
  - *See also* Rock crushers.
- Storehouses—
  - Consolidation, 147, 193.
  - Spare parts and material, 247.
  - Stock reduction, 159.
- Storms, local, 117, 381.
- Stowaways from West Indies, 370, 390.
- Strangers Club, election, 123.
- Strike, boilermakers, 97, 105, 129.
- Subsistence Officer, Acting, 280.
- Suicides, 4, 91.
- Supplies for Canal work. *See each issue.*

- Supreme Court appointments, 235, 251.
- Surcharges, labor and material, 175, 328.
- Surveys—
  - Biological, 145.
  - Fish, 42.
  - Lands, 3, 252.
  - Panama-David railroad, 49, 105.
- Swamp lands, reclaiming, 193, 337, 379.

T

- Taft, President Wm. H., visit and addresses, 57, 82, 91, 99.
- Taxes—
  - Collection, 58.
  - Vehicles, 109, 111.
  - *See also* Revenues, monthly reports.
- Telephone—
  - Culebra exchange, 55.
  - Improvements, 50, 177, 313.
  - Pacific Division service, 73.
- Third Division, Acting Assistant Engineer, 31.
- Tides—
  - Tables. *See each issue.*
  - Unusually high, 66, 257.
- Timekeeping rules published, 50.
- Timetables, Panama railroad. *See* Panama railroad.
- Tivoli Hotel—
  - Accomodations, additional, 244, 385.
  - Rates and rules, 87.
- Toro Point—
  - Beach life line, 313.
  - Coconut grove, claim adjustment, 281.
  - Transportation, Sunday, 378.
- Towing system, locks, 113, 385.
- Track shifters—
  - Conductor, 104.
  - Improvements, 141.
  - Records, 227.
- Trade, shipping growth, 57.
- Trails, clearing, 69, 76, 79, 87, 108,.
  - *See also* Highways.
- Transportation—
  - Children, requests, 238.
  - Committee recommendations, 22.
  - Equipment, Central Division, 196.
  - Official, 231.
  - Spoil, 18, 140, 196, 353, 409.
  - Steamship, 303, 335, 380.
- Traveling engineers, appointment and duties, 127, 152, 399.
- Tuberculosis work, Colon, 245.
- Tugs—
  - Fire fighting equipment, 401.
  - Schedules, 346, 356, 375, 380.
  - Use, 359.
  - Voyage of *Miraflores*, 73, 81.
- Typewriter repairs, 95.

U

- Union Oil Company, agreement, 241.
- United Fruit Company, steamship service, 78, 339.
- University Club, 67, 354.
- Unloaders—
  - Central Division records, 4, 18, 19, 45, 57, 106, 125, 165, 178, 196, 230, 249, 258, 291, 349, 367, 408.
  - Improvements, 141.

V

- Valves, lock, 33, 125, 219, 257, 393, 395.
- Vehicle tax, 109, 118.
- Visitors, inspection of work, 271, 326.
- Volunteer officers, examination, 326.

W

- Warehouse for Condemned Stores, 17.
  - *See also* Storehouses.
- Washington's Birthday, 207.
- Washington hotel, 306, 396.
- Waste, cotton, 95.
- Water—
  - Accounts with Panama, 111.
  - Cocoli Lake, 181, 223, 233, 353.
  - Drinking, 207, 391.
  - Fire protection, 345.
  - Pressure at locks, 197.
  - Restriction, 167, 312.
- Watersheds, hunting and trespassing, 224, 307.
- Weather conditions, monthly reports, 16, 55, 111, 118, 158, 191, 231, 263, 302, 328, 363, 399.
  - *See also* Rainfall.
- White Slave Law, 35.
- Wireless stations, working hours, 175.
- Women's organizations, 387.
  - *See each issue.*
- Work requests, 247, 295.
- Work, unsatisfactory, report, 271.

Y

- Young Men's Christian Association. *See* Clubhouses.

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NOTES OF PROGRESS.

Canal Medals and Service Bars.

Canal medals for American employes of the Isthmian Canal Commission and the Panama Railroad Company who completed two years of service between January 1, 1909, and January 1, 1910, have been received at the office of the Chairman. There are 1,035 medals to be distributed in accordance with the list published in The Canal Record of March 23 and subsequent dates. The service bars to be attached to medals earned prior to January 1, 1910, and representing two years of service, in addition to the two years represented by the medals themselves, have not yet been received but are expected within the next week or two. Employes entitled to the medals should write for information to the head of their respective Department or Division, through whom the distribution will be made. Such inquiries should not be made however, prior to September 15, as the distribution cannot be completed before that time.

Medals for service from 1908 to 1910, and bars for service from 1904 to 1910, and from 1906 to 1910 will be distributed about one year from this date, in accordance with a list that will be compiled and published after January 1, 1911.

Fresh Water for Power Plant Condensers.

Salt water backs up in the French canal from Limon Bay to the unloading slip at Gatun docks, and into the old West Diversion channel from which water for the condensers at the Gatun power plant is taken. While the old channel of the Chagres, north of Gatun Dam, was open the tide water dissipated itself in that channel, and there was always a stream of fresh water flowing from the East Diversion into the French canal. But since the dike from the Dam to Mindi was built the water in the East Diversion has been affected by salt, and the cast iron of the condensers already shows the ill effects. To prevent further corrosion, by insuring a constant supply of fresh water, a pile dam is being built which will keep the salt water out of the West Diversion channel and away from the intake for the condensers. Creosoted round piles have been driven and the gaps between them will be filled by driving creosoted sheet piling. The round piles are creosoted in the States, but the sheet piles will be treated at Gatun. A tank with steam heating apparatus will be constructed near the docks, and in this, creosote oil will be heated. The piles bathed in the hot oil will be dried out and the pores of the wood will open. They will then be placed in a bath of cold creosote oil, with the result that the oil will permeate every part of the wood.

Accumulative Leave.

At a meeting of the Commission held on August 25 it was decided to permit the accumulation of annual leave to an amount not to exceed 84 days, beginning with leave falling due on or after January 1, 1911. The rules for the granting of accumulative leave will be published in a future issue of The Canal Record.

Gatun Locks Pumping Plant.

Two 12-inch centrifugal pumps are being installed in the drainage sump at the north end of Gatun Locks, where the excavation in one shovel cut is already at the final grade, 45 feet below sea level. They will lift 4,200 gallons of water a minute each against a head of 100 feet, and will replace two 12-inch pumps designed to act against a 50-foot head only. They will be mounted on a barge 26 feet long, 16 feet wide, and 2 feet 8 inches deep, which will rest on timbers in the sump during low water, but will rise with the water during heavy rains. A 200-horsepower induction motor, supplied with current from the Gatun power house, will drive each pump.

Villages Exposed to Flood.

Notice to vacate has been given to the occupants of buildings likely to be flooded by freshets in the Chagres River during the present rainy season. All persons occupying buildings below elevation 40 feet above sea level at Tabernilla, 35 feet at Frijoles, 30 feet at Bohio, 28 feet at Ahorca Lagarto, and 25 feet at Gatun have been warned. At Tabernilla there are 10 such buildings, between Tabernilla and Frijoles, 36; at Frijoles, 44; at Bohio, 6; at Ahorca Lagarto, 16; between Ahorca Lagarto and Lion Hill 4; at Lion Hill, 10; island in Gatun Lake immediately north of the spillway, 2; Gatun saddles, west, 6. All the houses in Ahorca Lagarto, all the private houses in Frijoles, and all but five of the buildings at Lion Hill are likely to be flooded.

In the Gatun River valley, several houses between Gatun and Monte Lirio, five miles up the river, are already in the water. Monte Lirio is above the 35-foot contour and not likely to be flooded, but 13 houses on the north bank of the river are below the safety line. In the Trinidad valley, one house between the Chagres and Agua Clara, and 22 houses in Agua Clara, the whole village excepting two houses, are exposed, and several houses along the Trinidad River, both above and below Agua Clara, are already in the water. The houses at Escoval on the Trinidad have been moved to high ground. At Peña Blanca, on the Chagres near the mouth of the Trinidad, the whole hamlet of 23 houses is below the high water mark. The precaution, necessary this year as it has not been in years past, is due to the fact that Gatun Dam has raised the surface of the river above Gatun 10 feet higher at low water than it was before the Dam obstructed the channel.

Heavy Rainfall at Empire and Culebra.

In a shower local to Empire and Culebra on August 27 a total of 2.2 inches fell at Empire between 2 p. m. and 3.05 p. m., and of this amount, 2.16 inches fell in the 40 minutes from 2.20 to 3 p. m. At Culebra, between 1.25 p. m. and 3 p. m., 2.3 inches fell, and of this amount, 2.14 inches fell between 2.05 and 2.45 p. m.

Balboa Harbor Terminal Work.

Preliminary work in connection with the proposed Balboa terminal harbor improvements is in progress. It consists of boring to a depth of about 40 feet at mean tide to ascertain the character of the material to be removed, and in clearing off the heavy swamp growth that covers the harbor area. The clearing operations have been started on the long and narrow mud spit that extends into the present harbor, opposite the Balboa sand dock, separating the Canal channel from that of the Rio Grande. A lot of old French marine equipment had found lodgment on the point, but during the past six months most of it has been removed to the mainland on the west side of the Canal channel. The brush-cutting gang consists of about fifty 10-cent West Indian laborers, who work steadily through the noon hour and quit for the day at 4 p. m.

Building Notes.

Bids for the erection of a type-8 B house at Culebra for the inspector of shops, and of a type-8 C house at Ancon for the counsel of the Isthmian Canal Commission and chief attorney of the Panama Railroad Company, by contract, were opened in the office of the Chief Quartermaster at Culebra on Monday, August 22. There was but one bid for the type-8 B building at Culebra, that of James P. Moore for $2,050, and the contract was awarded to him. The work is to be completed in 60 days. There were two bids for the type-8 C building at Ancon, one from James P. Moore, who offered to complete it in 65 days for $2,150, and the other from E. D. Martin and R. Wilkinson, who offered to build it in 60 days for $1,850. The lowest bid was accepted. The contract covers labor only, the Commission furnishing all material. The house at Culebra will occupy a site on the west side of the hill overlooking the wagon

NOTES OF PROGRESS.

(*Continued.*)

road from the station, and the house at Ancon will be situated on the slope of Ancon Hill on the street west of the Administration Building.

The two type-15 houses taken down at Culebra and removed to Corozal to be reconstructed into type-17 houses will be situated a short distance from the office of the Division Engineer, on the west side of Davis avenue, the main street of the village.

An addition will be made to the boiler shop at the Ancon laundry to be used as a room for receiving soiled linen.

Plans have been completed at the office of the Constructing Quartermaster for a dynamite and detonator house at Toro Point. It will be 36½ by 17 feet in size.

Lumber Shipments.

The steamer *Cuzco* arrived at the port of Balboa on August 24, with a mixed cargo of lumber on board, aggregating 742,000 feet B. M. The steamer *Bramley* is on the way from Puget Sound with another cargo, while the steamer *Hornellen* is now loading, or about to sail, with a third consignment.

Extension of Operations at Miraflores Locks.

Concrete operations at the Miraflores Locks will be considerably increased after September 1, when the two 2-cubic yard mixers installed in the east storage trestle, near the north end of the upper lock, will be ready for service. They will produce concrete for the east side wall. Their output will be carried to the wall in buckets, either on cars which will run over a track extending along the edge of the forebay, thence down an incline track into the lock pit, or by hauling the buckets to a point where the berm crane can handle them.

Seven of the lateral culverts in the east chamber and the floor between them have been completed, and this work will be kept well in advance of the side wall construction. The ⅓-yard auxiliary mixer is now engaged on the floor and culvert work in this chamber, and further south four derricks have been erected for continuing the culvert excavation. The two ½-cubic yard auxiliary mixers are at work placing concrete in the sills of the upper end gates, dumping their output directly into place.

The concrete laid in the locks for each of the 8-hour working days of the week ending August 27, and the total to date, follows:

	AUXILIARY PLANT.			
	½-Cubic yard mixers	⅓-Cubic yard mixer	Large Stone	Total
August 22	152	47	....	199
August 23	201	51	14	266
August 24	203	30	....	233
August 25	163	47	....	210
August 26	143	40	14	197
August 27	165	57	20	242
Total	1,027	272	48	1,347
Previously reported	....	....	205	9,120
Grand total	....	....	253	10,467

Balboa Notes.

Barge *No. 4*, the first of the four dump barges erected at the Balboa shipways over two years ago, is receiving a general overhauling. These barges were built by the Maryland Steel Company, and shipped to the Isthmus in sections to be put together at Balboa. They are giving good service, and this is the first time *No. 4* has been laid up for repairs since it was placed in commission.

The steamer *Cuzco* from Puget Sound, laden with 742,000 feet of mixed lumber, reached the port of Balboa on Wednesday, August 24, with a heavy list to port, caused by the shifting of its deck load. It was met in the channel and towed to the Panama railroad wharf by one of the Pacific Division tugs.

The position of superintendent of subaqueous excavation in the Pacific Division has been abolished. The office was directly under the resident engineer at Balboa, and the work which consisted of drilling, blasting, and operation of the rock breaker *Vulcan* and drill barge *Teredo*, will continue to be in his charge.

The suction dredge *Culebra* broke a blade in its propeller on Saturday, August 20, by striking a log in the channel. A new blade was fitted, and the boat was ready for service again the following tide.

Clapet *No. 10* is on the gridiron at the shipways, where it is being equipped with a sand excluding device designed to prevent sand from cutting the propeller shaft and bushing.

Work on the concrete barge, under erection near the shipways, is advancing steadily. The frame work is in place and the laying of concrete was begun last week. The barge will be used for general purposes about the harbor. The construction of a dump scow of reinforced concrete, which will be larger than any so far built, is contemplated.

Concrete in Gatun Locks.

A statement of the concrete placed in Gatun Locks for the week ending August 27, and the total to that date, follows:

DATE.	Cubic Yards.			
	Construction plant.	Auxiliary plant.	Large stone.	Total.
August 22	1,822	882	330	3,034
August 23	2,182	878	254	3,314
August 24	1,918	932	250	3,100
August 25	1,936	1,018	314¼	3,268½
August 26	1,626	988	326	2,940
August 27	2,134	952	250½	3,336½
Total	11,618	5,650	1,725	18,993
Previously reported	....	....	....	655,083½
Grand total	....	....	....	674,076½

Best Week's Record at Pedro Miguel.

A total of 12,118 cubic yards of concrete was laid in the locks at Pedro Miguel during the week ending August 27, which is 744 cubic yards more than was laid during any one previous week since concrete laying at this point was begun. The record for the six 8-hour working days, and the total to August August 28, follows:

Date	Concrete placed.	Large stone.	Hours worked.	No. of mixers	Total.
August 22.	1,886	51	28:00	4	1,937
August 23.	2,076	50	31:00	4	2,126
August 24.	1,916	20	28:50	4	1,936
August 25.	1,878	29	28:50	4	1,907
August 26.	2,042	12	29:00	4	2,154
August 27.	2,028	30	28:00	4	2,058
Total	11,82	292	173:00	4	12,118
Previously reported	....	2,467	....	......	244,014
Grand total	....	2,759	....	......	256,132

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the week ending August 27, follows:

Date.	Hours worked.	Cubic Yards.
August 22	11:41	3,690
August 23	3:52	1,080
August 24	13:38	4,018
August 25	16:57	4,527
August 26	15:10	3,149
August 27	13:43	2,845
Total	75:01	19,309

An additional track shifter for use on the dry fill of Gatun Dam has been ordered at Gorgona shops.

LABOR FORCE AND QUARTERS IN JULY.

On July 27 there were 36,450 employes actually at work on the Canal and the Panama railroad, and of this number, 29,901 were Canal employes. The gold force on the Canal work, composed almost entirely of white Americans, was 4,380. No labor recruiting was necessary during the month.

The report of the Chief Quartermaster for July, shows that the number of family quarters occupied by "gold" employes was 1,683, which is 3 less than in June, and the occupants numbered 5,103, an increase of 55. Of this number, 1,775 were women, and 1,659 children. Bachelor quarters occupied by "gold" employes numbered 1,925 and the occupants numbered 3,576, of whom 133 were women. The family quarters, occupied by European laborers numbered 303, and the occupants, 851; bachelor quarters, 111, and the number of occupants, 5,417. The family quarters occupied by West Indians numbered 1,078, and the occupants, 3,522; bachelor quarters, 258, and the number of occupants, 5,096.

The following statement shows the force actually at work on July 27, 1910:

DEPARTMENT.	Monthly.	Artisans.					European Laborers.		West Indian Laborers.					Total Silver.	Total Gold.	Grand Total.
		44 cents.	32 cents.	25 cents.	20 cents.	16 cents.	20 cents.	16 cents.	20 cents.	16 cents.	13 cents.	10 cents.	7 cents.			
Const'ct'n and Eng'r'ng.	4,164	17	32	293	674	2,569	3,185	1,945	110	480	3,128	3,832	283	20,712	3,296	24,008
Civil Administration	159	..	..	2	3	17	......	......	...	.....	......	3	....	184	302	486
Sanitation	688	..	..	2	4	2	2	1	...	.....	6	362	8	1,065	388	1,453
Quartermaster's	1,048	4	2	68	168	132	319	110	32	.....	11	1,001	12	2,907	224	3,131
Subsistence	628	..	..	1	1	......	......	......	...	.....	......	......	....	630	68	698
Disbursements	8	..	..	....	.....	......	......	......	...	.....	......	......	....	8	24	32
Examinat'n of Accounts.	6	..	..	....	.....	......	......	......	...	.....	......	......	....	6	87	93
Totals	6,701	21	34	366	850	2,720	3,506	2,056	142	480	3,145	5,188	303	25,512	4,380	29,901

Panama railroad force, 3,506; Panama railroad relocation force, 2,064; Panama railroad commissary force, 979. Total, 6,549.

LAND SURVEY.

Work Preparatory to Opening Government Lands to Farmers.

Field work on the survey of the land area of the Canal Zone as it will be after the completion of the Canal has been begun. The survey will be prosecuted for the Canal Zone government by the Third Division of the office of the Chief Engineer, and the expenses will be paid from an appropriation of $75,000 made for this purpose by the Congress at its last session.

It will be based on the triangulation survey of the Zone, which is nearly completed, with the initial point of the system of rectangular coordinates on Balboa Hill, the top of which is visible from hills in all parts of the Zone. A standard meridian and base line will intersect in the triangulation station on that hill, and boundary lines, run parallel with this meridian and base line respectively, will divide the line into quadrilaterals with sides measuring two kilometers, about (1.24 statute miles), and containing 4 square kilometers, equivalent to 400 hectares (988.42 acres). Certain of the boundary lines at a distance of not more than 10 kilometers (6.21 miles) from one another will be run with the utmost care and will be known as "standard guide lines," and all intermediate boundary lines will be carefully adjusted with reference to these guide lines. Field measurements on the guide lines will be as infrequent as possible, intersections from triangulation stations, with short spurs carefully measured and checked, being used to control direction.

It is planned to prosecute the work in the following order, starting from the initial point on Balboa Hill: (1) Southeast quadrant, which includes all Zone lands approximately south and east of Las Cascadas. (2) Northeast quadrant, including all Zone lands approximately north of Las Cascadas and east of Gorgona. (3) Northwest quadrant, including all Zone lands north and west of Balboa Hill. (4) The remaining lands.

During the progress of work on the boundary lines the topographer, in addition to his other work, will carefully note all existing property lines, clearings, trails, streams, and other natural or artificial features. He will also make notes regarding the character of the country passed over, stating fully whether it be swampy or hilly, rocky or fertile, and, where possible, will get information from the natives as to the character of the crops to which the soil is best adapted. Full notes will be made regarding the character and amount of vegetation, whether the trees be of hard or soft wood, and the probable composition of the rocks and soil. Notes will also be made as to the best location for trails for opening up the country.

The purpose of the land survey is to get accurate data on which a system of land leasing may be built up, in accordance with the Act of Congress of February 27, 1909, which provides for 25-year renewable leases of tracts of not over 50 hectares, to persons 21 years of age or over, who satisfy the Government that they expect to settle upon and cultivate the land. This data will be placed on three maps or plans, as follows:

(1) Large scale record plans, 56 by 48 inches, scale 1 to 2,000, or approximately one inch to 167 feet. Each of these plans will cover 4 square kilometers of territory, will be used as a record plan of the allotments in that quadrilateral, and will contain all information regarding the location in detail. It would require 500 of these sheets to cover the Zone, land and water.

(2) Medium scale district plans, scale 1 to 20,000, or approximately one inch to one-third of a mile. These plans will cover the entire Zone, their boundaries being limited by the drainage basins of the principal streams. They will show the general lay of the land, its topography and availability for general development. The principal use of these plans will be in the comprehensive laying out of roads and trails; and the interrelation of villages and plantations, the character of the country and its adaptability for farming, grazing or plantation work will be shown.

(3) Small scale general map of the Zone, including Gatun Lake, scale 1 to 40,000 approximately five-eighths of an inch per mile. This will be the general map of the entire territory and will contain some information in regard to the territory immediately contiguous on either side of the Zone lines.

The sections will be designated or indexed by numbers, beginning with the origin of the system on Balboa Hill and progressing north, south, east, and west, along the axes, the quadrant in which the section is located being shown by the initial letters of the direction words. Thus, a section situated in the southeast quadrant at a point 8 kilometers south and 11 kilometers east of Balboa Hill would be indicated "S. 8; E. 11."

Promotions in Engineering Positions.

In accordance with recommendations of a committee appointed for that purpose, the following rules have been adopted for examinations to procure eligibles for promotion among rodmen and levelmen employed on the Canal or the Panama railroad:

1. First examination to be held on the last Sunday in October and first Sunday in November, 1910. All rodmen and levelmen in the service of the Commission and Panama Railroad Company to be notified that they are expected to enter the examination on one of these dates, provided however, that if possible, arrangements should be made to examine all applicants at the same time, and if this is not practicable, and examinations are held on different dates the problems and engineering questions be changed for the second Sunday's examination.

2. Subject to further consideration, examinations will be held every six months and all rodmen and levelmen who have not been previously examined be required to enter.

3. No employe shall be considered eligible for promotion from rodman to levelman and from levelman to transitman until he has submitted to and passed the required examination. All employes who have passed the examination will be considered equally eligible for promotion under such regulations regarding selection of employes for promotion from the eligible list by the heads of departments and divisions as may be decided upon later.

4. A rodman will be permitted to take the examination for transitman in preference to the examination for levelman if he shall so elect, and in case he passes the examination for transitman he shall be considered eligible for promotion to levelman and from levelman to transitman without further test.

5. No levelman or transitman shall be selected in the United States for service on the Isthmus as long as there are already on the Isthmus men in the lower grades who have passed the requisite examination and are available for promotion or transfer to the vacancies which it is proposed to fill.

6. Examinations will be divided into three parts:

(*a*) Written examination, as per sample submitted with committee's report. Relative weight, 40 per cent.

(*b*) Education, experience and testimonials. Relative weight, 40 per cent. For testimonials applicants will be permitted to submit original, or certified copies of letters from previous employers, which will be returned to them. A blank form should be prepared to be submitted to the head of department or division immediately employing the applicant, who will fill same out and return to the Board stating his opinion of the applicant's conduct, ability and efficiency while under his supervision, using certain specified terms such as "excellent," "very good," "average," "poor."

(*c*) Oral examination. Relative weight, 20 per cent.

PERSONAL.

Mr. H. H. Rousseau, with Mrs. Rousseau, sailed for the States on his annual leave, on the *Ancon* from Cristobal, on August 26.

Mr. W. G. Comber sailed on the United Fruit Company's steamer *Atenas* for New Orleans on Thursday, August 25, on his annual leave of absence.

Building Gatun Spillway.

The amount of concrete placed in the spillway of Gatun Dam in the week ending August 27, with the total to that date, follows:

Date.	Cubic Yards.		
	Concrete	Large rock.	Total.
August 22	100	....	100
August 23	....	....	....
August 24	....	....	....
August 25	74	....	74
August 26	114	15	129
August 27	120	....	120
Total	408	15	423
Previously reported	....	....	89,929
Grand total	....	....	90,352

Ancon Crusher.

A statement of the rock crushed at Ancon quarry for the week ending August 27, follows:

DATE.	Hours worked.	Cubic Yards.
August 22	5:40	1,710
August 23	7:20	1,815
August 24	8:00	2,775
August 25	7:30	2,970
August 26	7:00	2,325
August 27	8:00	2,475
Total	43:30	14,070

University Club Dance.

The special train for the dance of the University Club in Panama on the night of September 3 will leave Empire at eight o'clock for Panama, and returning, will leave Panama at one o'clock the following morning. The train will run only between Panama and Empire.

Authority has been granted for the construction of a rifle range at Corozal between the Commission clubhouse and the foothills. The expense is to be borne by the rifle club asking permission to build the range.

BASEBALL.

Free Transportation Conditionally Granted to Players—A Six-Team League.

Free transportation will be granted to Isthmian baseball players in the regularly organized league during the 1910-11 season, providing certain stipulations are agreed to. These are embodied in the following report recently submitted by Commissioner H. H. Rousseau, President of the Isthmian League:

> Referring to the joint report of June 1 submitting certain recommendations regarding the future conduct of baseball on the Isthmus in which it is stated that definite information in regard to obtaining free transportation for the ball teams was necessary before arriving at a decision, I beg to state for your information and such other action as you may consider proper that the following proposition has been tentatively approved by the Chairman of the Isthmian Canal Commission, which should result in securing the free transportation desired and without expense to the Commission:
>
> The Commission pays the Panama railroad for all free transportation granted Commission employes, a monthly sum agreed upon in advance as measuring the value of services rendered. This contract price is an even thousand dollars, and it is understood that the value of transportation may vary $500 either way from this $1,000, without affecting the contract price. Thus, in other words, it is an average price. It can very well happen then that the Commission could afford to offer to include in its transportation, the ball players, without affecting its contract with the Panama railroad. It is assumed that baseball transportation would never exceed $200 per month, and it will probably be nearer $150 per month. If, however, by including baseball transportation, the Commission would become liable to an increase in its contract price to the Panama railroad—$11,000 per month—it would expect to deduct the cost of baseball transportation from its transportation expense for that month. In such cases the baseball league will have to assume this expense itself for that month, and for every month in which this occurs.
>
> The Commission in granting free transportation on these terms would expect to have the payment of baseball transportation guaranteed, which might be done by the various clubs concerned authorizing any expense for transportation on request of the Commission, to be paid from the $100 cash forfeit put up at the beginning of the season. I have looked over the monthly transportation expenses during the past year, and it does not appear to me that a contingency under these terms, by which the baseball clubs would become liable for passenger transportation, is very certain. I believe that this arrangement is the most favorable one that can be made with the Commission at the present time regarding free transportation for ball players and if the baseball league desires to make a final proposition to the Chairman and Chief Engineer of the Commission along these lines, he has indicated that it will receive his approval.

The above arrangement is looked upon favorably by the officials of both of the old leagues, and a meeting will be called within the next few weeks to act upon the report.

The plans for the coming season contemplate the organization of a six-team league to take the place of the two former leagues, to be composed of clubs from Colon, Cristobal, Gorgona, Camp Elliott, Empire and Ancon. This plan eliminates two of the four teams that composed the Atlantic League last year, but leaves the present Isthmian League circuit intact. There will be three ball parks available, one each at Colon, Empire, and Ancon, the Gorgona grounds having been abandoned last season.

Labor Day Athletic Meet.

A total of 165 entries, representing 70 different individuals, has been received for the athletic meet to be held at the Empire baseball park in the forenoon of Labor Day, September 5. Arrangements for the event are being perfected, and a special train will be run from Colon to Empire leaving Colon at 6.45 a. m., and returning, leave Empire at 5 p. m.

The committee on management consists of W. E. Burrell, chairman; Geo. R. D. Kramer, secretary-treasurer; F. C. Freeman, Culebra, in charge of transportation; W. H. Warr, Gatun, in charge of advertising; A. O. Ludwig, Empire, in charge of equipment; J. T. Hopkins, Gorgona; Wm. H. Geer, Porto Bello.

The officials in charge of the contests are: Referee—J. T. Hopkins. Clerk of Course—W. E. Burrell. Assistant Clerks of Course—James A. Jamison, Martin Schwallenberg, J. P. Mead. Track Judges—W. H. Warr, chairman; W. P. Juley, A. Richards, W. J. Wright. Field Judges—A. O. Ludwig, chairman; H. R. Seaton, G. C. McCullough, F. Summers. Timekeepers—J. T. Hopkins, Everest Dauphine, D. T. Edwards, C. H. Ourand. Scorer—W. E. Burrell, chairman; R. W. Hart. Inspectors—W. H. Warr, chairman; H. O. Hostetter, W. G. Ross. Announcer—E. L. Emery. Marshals—Lieut. W. A. Vickery, Sergts. E. C. Galloway, John Johanna.

Wesleyan Church Missions.

The Wesleyan Methodist church in Panama, referred to in THE CANAL RECORD of August 17, cost 2,000 pounds Sterling, about $10,000, not $2,000, as stated in that issue.

A series of meetings termed the "annual missionary campaign" has just been concluded. Sermons were preached on Sunday, August 14, at Colon, Empire, and Paraiso. The preachers at Colon were the Rev. Carl H. Elliott of the Union Church, Cristobal, and the Rev. Mr. Jarrett of "The Regions Beyond" mission, whose field of work for several years past has been Peru. At Empire, J. T. Barton preached, and at Paraiso the Rev. M. Britton King. On Sunday, August 21, a public meeting was held in Panama at which the Hon. Maurice H. Thatcher of the Isthmian Canal Commission presided, and the preachers were the Revs. C. H. Elliott and E. G. Cooke. Public meetings were held also on week-day evenings. Besides the circuit ministers the following took part: The Revs. Mr. Jarrett, C. H. Elliott, A. A. Nellis, T. H. Thorburne, and E. G. Cooke, and Mr. Kent.

Civil Service Examinations.

Civil service examinations will be held at Culebra as follows:

Clerk	September 18.
Physician	September 18.
Typewriter	September 18.
Civil Engineer and Superintendent of Construction	September 18–19.
Draftsman	October 16.
Postal clerk	October 16.
Trained nurse	October 16.
Stenographer and typewriter	October 30.

All the above are for appointment in the Isthmian Canal Service, with the exception of the examination for civil engineer and superintendent of construction, which is for appointment in the Quartermaster's Department at large.

Applicants should write for information and application blanks as early as practicable to the undersigned. JOHN K. BAXTER,
Secretary, Isthmian Civil Service Board.
Culebra, C. Z., August 29, 1910.

Isthmus to New York via. Cuba.

The Hamburg-American line has put two ships in the service between New York and Jamaica, with calls at Santiago, Cienfuegos, Manzanillo, and Havana in Cuba. Passengers from the Isthmus can connect with these steamers at Kingston, taking the ship that leaves Colon fortnightly on Tuesday and arrives at Kingston on Thursday. Expenses in Kingston during the one-day wait for the Cuba and New York ship must be borne by the passenger.

The regular rate from Colon to New York, via. Cuba is $115; to Santiago, $40; to Cienfuegos, $45; Manzanillo, $55; Havana, $70; and the usual discount will be made to employes of the Commission or Panama railroad.

Premature Explosion at Ancon Quarry.

Four laborers, one Spaniard and three negroes, were killed in a premature blast at Ancon quarry early in the afternoon of August 30. They were Leon Alonzo, Spaniard, check No. 94458; Peter J. O'Gara, Montserrat, check No. 64567; Henry Jerrel, Montserrat, check No. 75797; Nelson Dangloss, St. Vincent, check No. 27638. The men were tamping dynamite in holes at the toe or foot of a mass of rock above the top ledge or bench of the quarry when the explosion occurred. The rock was thrown out of the hill upon the bench where the men were at work burying them. All the force in the quarry was immediately set at relief work and the last body was recovered about midnight Tuesday.

Accident and Suicide.

John Jackson, an American boy, 13 years of age, son of Henry Jackson residing at San Pablo, was run over and killed by a train between Mamei and Juan Grande on Thursday afternoon, August 25. He was employed as a telephone operator in the transportation department of the Central Division. He stepped out of a signal tower in front of a train of empty cars, evidently not hearing its approach on account of the noise made by the passing of a loaded train on the other track. He was born in Plant City, Fla., and had been on the Isthmus about 19 months.

Harry Tafel, an American, residing at Cristobal, employed in the local freight department of the Panama railroad up to August 16, committed suicide in Colon on Wednesday, August 24, by taking hydrocyanic acid. He was about 24 years of age, had been on the Isthmus since March, 1910, and was a native of Pittsburg, Pa., where his father, William Tafel of 472 New York avenue, resides. The body was buried in Mount Hope cemetery.

Central Division Unloaders.

A statement of the Lidgerwood cars unloaded in the Central Division during the months of June and July, 1910 follows:

JUNE.

Location.	No. of unloaders.	No. of trains.	No. of cars.
Balboa	3	895	17,005
Miraflores	3	836	15,884
Gamboa	2	475	8,825
Tabernilla	3	724	13,756
Totals	11	2,930	55,470

JULY.

Location.	No. of unloaders.	No. of trains.	No. of cars.
Balboa	3	864	16,416
Miraflores	3	760	14,440
Gamboa	2	492	9,348
Tabernilla	2	522	9,918
Totals	10	2,638	50,122

Bids will be called for within the next few weeks for furnishing return tracks for the electric towing mules for the locks at Gatun and Pedro Miguel. The plan for towing provides for one return track for the towing machine on each of the side walls, and one track on the middle wall. Only the return tracks are needed immediately, in order that work on the locks may not be retarded.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

The bowling game between Gorgona and Culebra on Saturday night, August 27, resulted in the Gorgona team taking three games, the following being the scores:

Gorgona.				Culebra.			
Heim	153	170	156	Hall	145	167	153
Stoehr	194	133	136	Warner	137	107	132
Misal	106	131	129	Fox	143	143	124
Burmaster	123	123	....	Mengel	136	167	127
Wright			159	Herrington	137	126	146
Varenkamp	157	170	125				
Total	733	727	705	Total	698	710	682

The following is the standing of the teams in the local tournaments:

Teams.	Won	Lost	Per cent.
TENPINS.			
Lock and Dam	6	3	666
Quartermaster's	4	4	500
Miscellaneous	3	3	500
Chairman's Office	1	4	200
DUCKPINS			
Miscellaneous	6	0	1000
Lock and Dam	3	3	500
Quartermaster's	2	4	333
Chairman's Office	1	5	166

The smoker on Friday night, August 26, was enjoyed by a large number of men. The following program was rendered: Motion pictures; solo, Mr. Kramer; boys' drill, free hand and dumb bell; selections by the Culebra male quartet; solo, Mr. Ross of Empire.

In order to pick out a team to represent Culebra in the Isthmian Bowling League, scores will be kept and averages taken up to September 8, when the five men who have the highest averages will make the team. The five next highest men will be picked to make up the second team. A large number of men should come out and try for the teams. The alleys will be open at noon and at 5 o'clock for practice.

A pool tournament will begin on September 1, with two classes, "A" and "B," respectively. The man that wins the highest number of games will receive a cue. Handicaps will be given in order that all men may have an equal chance for the finals.

Men interested in the 5.15 gymnasium class that meets Mondays and Wednesdays, are asked to join at their earliest convenience.

EMPIRE.

The meeting of the discussion club held on Wednesday evening, August 31, was led by A. B. Dickson, the subject being "Responsibility."

The second of a series of moving picture entertainments was given on Tuesday, August 30.

About 200 people attended the public debate and entertainment on Friday night, August 26. Mrs. Sommers sang in place of the quartet, which was unable to appear. The Dutch dance, in costume, by eight girls of Empire, was a pleasing novelty.

E. M. Goolsby and C. J. Huson are tied for high score in the monthly bowling tournament, with 246 each.

The Empire boys' team will bowl the Gorgona boys, team on Saturday morning, September 3.

The finals for the monthly pool tournament will be played off this week, E. O. Smith representing class "B" and E. Robertson class "A".

Miss Gay Zenola MacLaren of New York will give her first production of "The Music Master" in Empire next Friday evening, September 2.

Empire took three games from Cristobal on the Empire alleys on Saturday night, August 27. Following: are the scores:

Cristobal.				Empire.			
Barrett	159	123	145	Pearson	161	145	171
Adams	126	148	165	Miller	152	157	98
Blackburn	142	126	191	Giavelli	142	176	166
Read	123	131	114	Sawtelle	162	133	143
Weston	130	140	122	Shau'hn'ssy	175	219	186
Total	680	668	737	Total	792	830	764

The following 200 scores were rolled during the week ending August 27: Yount, 202: Goolsby, 246; Brown, 222, 206,202; Gustavson, 209; Huson, 246; 205, Reed, 204; Potter, 205; Shaughnessy, 219.

GORGONA.

At the monthly song service held on Sunday night, August 28, the Hon. Maurice H. Thatcher gave an address on "Character Building." Geo. R. D. Kramer of Culebra sang two pleasing solos.

On Friday night, August 26, an entertainment for the people in Gorgona was given in the clubhouse. The program consisted of music, readings and a tableau. The tableau was a sketch entitled "Sweetheart Days" in five scenes. The following people took part: W. W. Darling, J. M. Holt, E. M. Volz, J. M. Callopy, Miss Ruth Hackenberg, Miss Margaret Stevens and Miss Edith Stevens. A reading was given by Mr. Earl Buford, a violin solo by Ernest Reinold, and a vocal solo by Mrs. James Murray of Las Cascadas. Refreshments were served.

On Thursday night, August 25, a pleasing moving picture entertainment was given to a good-sized audience.

On Tuesday evening, August 23, the Culebra volleyball team took two out of three games from the Gorgona team on the Gorgona floor.

The standing of the local basketball league is as follows:

Teams.	Won	Lost	Per cent
Miscellaneous	2	0	1000
Nut-splitters	1	1	500
Rivet-busters	1	1	500
Pen-pushers	0	2	000

On Saturday night, August 27, Lyle Kneeland won the class "A" and "B" monthly pool tournament, the prize for which is a pool cue.

The third meeting of the discussion club will be held on Tuesday night, September 6.

GATUN.

The next meeting of the discussion club will be held on Friday night, September 2, with R. G. Goodman of Cristobal as leader. The subject chosen is "What Is Happiness."

Fifteen men have entered in the Labor Day athletic meet to be held at Empire on September 5. A special train leaves Cristobal at 6.45 a. m. Only those having admission and train tickets, which can be secured at the clubhouse, will be allowed on this train. The train leaves Empire on the return trip at 5 p. m.

The present standing of the men in the handicap pool tournament is as follows:

	Won	Lost	Per cent
Bailey	6	2	750
Durand	6	2	750
Eggleston	5	2	714
Kenney	5	3	625
Ourand	3	2	600

The bowling match between the Gatun first and second teams on August 25 resulted in the second team winning two out of three games, the following being the scores:

First team				Second team			
Barte	166	145	173	Hodges	167	219	184
Louner	124	165	165	Dalton	157	157	155
DeMoll	156	153	166	Myers	161	164	187
Duryea	127	167	155	C.R.H'r'g'n	204	148	148
Durand	159	187	144	Wilson	127	135	113
Total	732	817	803	Total	816	823	787

On Saturday, August 27, Gorgona's first and second teams bowled Gatun's first and second teams. The first team from Gorgona won two out of three games from the Gatun first team, and the Gatun second team won two out of three games from,the Gorgona second team, the scores being as follows:

Gorgona first team.				Gatun first team.			
Roper	146	170	171	Barte	180	164	158
Barlow	145	158	169	C.A.H'r'g'n	166	125	157
White	146	163	208	Severn	147	157	126
Sexton	163	161	177	DeMoll	157	172	132
Otis	226	181	192	Durand	203	164	186
Total	826	833	917	Total	853	782	759

Gorgona second team.				Gatun second team.			
Gaedkie	136	132	183	Myers	193	156	114
Haggerty	141	172	105	Dalton	179	145	153
Stewart	113	125	145	C.R.H'r'g'n	220	168	130
Varenkamp	133	132	153	Wilson	162	122	141
King	137	177	145	Hodges	190	160	161
Total	660	738	731	Total	944	751	699

CRISTOBAL.

A preliminary track meet was held on Friday night, August 26, as a "try-out" to pick men for the Labor Day athletic meet at Empire. Fourteen men are entered from the Cristobal Y. M. C. A.

Gorgona won the chess match played Saturday night, August 27, by a score of five to three games. The following men played:

Gorgona.	Won	Lost	Cristobal.	Won	Lost
Taylor	2	0	Shaff	0	2
Strong	1	1	Alper	1	1
Bowell	1	1	Pack	1	1
Nagle	1	1	Cleall	1	1

Cristobal defeated Gorgona in a game of basketball on Saturday night, August 27, by a score of 63 to 15.

The following men bowled 200 scores during the week ending August 27: Hess, Thomas, and B. Adams. The high score for the month is held by Mr. Grover with 213.

The meeting of the discussion club held on Thursday evening, August 25, was led by Wm. E. Burrell, the subject being "Physical Efficiency." A new series will begin with the meeting on Thursday night, September 1 to be led by E. A. Putnam of Culebra. The subject will be "What Is Failure."

On Monday night, August 22, a moving picture entertainment was given before a large audience.

The membership campaign will begin on September 1 and will be continued for one month.

LOST—On Saturday, August 27, between the industrial railway and the commissary at Gatun, one pair of eye glasses in a case. Reward for return to E. L. Cheek, Gatun.

OFFICIAL CIRCULARS.

Manufacture, Alteration and Repair of Machinery and Equipment.

CULEBRA, C. Z., August 25, 1910.

CIRCULAR No. 343:

The following rules, governing the manufacture of new material on the Isthmus, and the making of alterations in and repairs to all kinds of machinery, mechanical appliances, marine equipment and rolling stock of the Isthmian Canal Commission and the Panama Railroad Company, are established to take effect September 1, 1910:

1. Mechanical work will be divided into the following three classes, viz:

(*a*) Manufacture of new material, which includes the making of all spare parts for use in future repairs.

(*b*) Alteration of existing material.

(*c*) Repair of material, which will be limited to the putting into serviceable condition of broken and worn parts that admit of such action; to the replacing of irreparably broken and worn-out parts by spare parts taken from store, and to the making of new parts required to replace such parts only as may actually be broken and worn-out, but which cannot be put into serviceable condition and for which spare parts are not in store.

2. Request for the manufacture of new material and apparatus of any kind, and for alterations in existing material and apparatus, will be submitted by the division engineers, the General Superintendent of the Panama Railroad Company and the heads of other departments to the Chief Engineer on form 159 C. E. Requests for castings will indicate the shop in which it is suggested they should be machine finished. If it should be necessary to manufacture new material or to alter existing material before the written approval of the Chief Engineer can be obtained on form 159 C. E., either oral or telephonic request may be made to the office of the Chief Engineer. Written request will be submitted on form 159 C. E. in all such cases, with the name of the official who approved it and the cause of the urgency noted thereon.

3. All repairs and alterations to locomotives, Lidgerwood plows, spreaders, track shifters, pile drivers, traveling steam cranes, and orange peel and clam shell buckets, for which the estimated cost of labor exceeds $50 per unit, will be made at the Gorgona shops, except that at Porto Bello, Nombre de Dios and Toro Point the limit on cost per unit will be $300. Circular No. 300, dated January 5, 1910, is rescinded.

4. All repairs and alterations to steam shovels and rock drilling machines, for which it is necessary to send the shovels and drilling machines to a machine shop, will be made at the Empire shops, except that repairs to the extent permitted by the facilities of the shops at Porto Bello, Nombre de Dios and Toro Point may be made at those places.

5. All repairs and alterations to dippers for steam shovels, and to dippers, buckets and sister links for dredges, that involve the removal of parts assembled to the body by rivets, will be made at Empire shops, except that at Porto Bello, Nombre de Dios and Toro Point the limit will be the replacing of any part of the body. The replacing of bushings in sister links will be considered to be light running repairs.

6. All repairs to air pumps that require machine work, and all except light running repairs to concrete mixers and spare parts therefor, will be made at the Gorgona shops.

7. All repairs to steel and wood standard gage cars, except light running repairs, will be made at Gorgona shops.

8. Castings for repair work only, including such machine work thereon as may be requested, will be made at the Gorgona shops.

9. Division engineers, the General Superintendent of the Panama Railroad Company and the heads of other departments should make request on the Chief Engineer not later than June 15 of each year for annual blanket work orders on the Mechanical Division and Central Division for such repair work under paragraphs 3 to 8, both inclusive, as may be required during the succeeding fiscal year. Requests should indicate each of the six classes of repairs for which blanket orders are desired. Division engineers, the General Superintendent of the Panama Railroad Company and the heads of other departments are authorized to empower such of their subordinates as they may desire to call directly upon shops for repair work under annual blanket work orders. The names and positions of such subordinates should be furnished direct to each shop.

10. Whenever any article is sent to a shop for repair, a careful examination of its general condition will be made, and if the estimated cost of repairs constitutes an appreciable percentage of the value of the article, the condition thereof and the estimated cost of repairs will be submitted to the division engineer, General Superintendent of the Panama Railroad Company, or

other head of department concerned, with request for instructions in the case.

11. The replacing of a part before its usable life has been exhausted is not economical, except under extraordinary circumstances. Construction and shop officials will cooperate to limit each repair, in both extent and character, to that necessary to keep the equipment in such condition as will permit it to produce the maximum service with the minimum cost of maintenance.

12. New marine constructions and alterations in existing marine equipment will be undertaken only after approval by the Chief Engineer, and the necessary work will be done in such shop or shops as may be indicated in each case by him.

13. All doors, window sashes, panel work, furniture of any kind not purchased under contract, and all light wood work required to be mortised and tenoned, will be made at the Lirio shops upon request on form 159 C. E

14. Jack blocks for steam shovels will be made at Empire shops.

15. All new material, including spare parts for future repairs, will be turned over to the Quartermaster's Department as soon as completed for issue on foremen's requisitions.

16. It is the policy that all manufacturing work, including the making of reserve supplies of spare parts for future repairs, shall be made at the Gorgona and Empire shops, except that new marine constructions and alterations therein may be made at Cristobal (dry dock) and Balboa shops, and that light running repairs only shall be made at all other shops. The observance of this policy is enjoined.

Geo. W. Goethals,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Seniority of Locomotive Engineers and Conductors.

Culebra, C. Z., August 27, 1910.

Circular No. 348:

The seniority of locomotive engineers and conductors of the Isthmian Canal Commission and Panama railroad relocation will be governed by the following rules, effective September 1, 1910:

1. The seniority of qualified engineers and conductors will be governed by the date they are qualified. If two or more are qualified on the same date, the total length of service (qualified and unqualified) as engineer or conductor will govern. Increase to qualified pay will depend on the date started on main line work.

2. The seniority of unqualified engineers and conductors will be determined by the date they entered the service as engineers or conductors, regardless of transfers from one division to another.

3. When additional qualified men are needed, the senior unqualified man in the service (all Divisions) will be given an opportunity to qualify, provided he has the requisite railroad experience.

4. If it becomes necessary to qualify a man, and the employe entitled to promotion is sick or on leave of absence, a temporary promotion of the man next on the list may be made with the understanding that the senior man will supersede him on his return to duty. In such case, the date the temporary man qualifies will also be given the senior.

5. Seniority will not hereafter be affected by absence from duty so long as the employe's service is continuous.

6. In case of reduction of force, discharges will be made as follows, all divisions being considered as one service:

A. Aliens.

B. Men who have been reported for being in the hospital for alcoholism.

C. Men habitually sick, or physically unfit for Isthmian service, as shown by repeated absence from duty.

D. Men with unsatisfactory records (to be determined by the division engineer).

E. Men at the foot of seniority list; the junior qualified man shall be given the right to remain as senior unqualified man and the junior unqualified man, except as provided above, will be discharged if there is no vacancy.

7. If it becomes necessary to readjust the force by reducing the number of qualified men and increasing the number of unqualified men without decreasing the total force, the qualified men in the division affected will be given the opportunity, according to seniority, to transfer to any qualified positions vacant, they being replaced by junior unqualified men who can be spared from the division to which they transfer. In the event there are no vacancies in the qualified grade, the youngest qualified men in the service will be rerated as unqualified and any necessary transfers made to readjust the force.

8. The seniority of a qualified man transferred to the Panama railroad will date from his transfer.

9. The conductors and engineers on the Panama railroad relocation work will be included in the Isthmian Canal Commission seniority lists and will be subject to these rules the same as though they were employes of the Commission.

10. If a qualified man refuses an offer to transfer to the Panama railroad operating department, he will thereafter have no right to such a transfer and his name will be marked on the seniority list as having refused transfer.

11. In case of reduction of Panama railroad force, qualified men may be transferred to vacancies in the Isthmian Canal Commission force, but the Isthmian Canal Commission men will not be displaced to provide vacancies.

12. Personnel of crews in charge of existing runs will not be changed by this seniority order except as vacancies occur.

Geo. W. Goethals,
Chairman and Chief Engineer.
President, Panama Railroad Company.

Labor Day a Holiday.

Culebra, C. Z., August 26, 1910.

Circular No. 345:

Labor Day, Monday, September 5, 1910, will be observed as a holiday throughout the Canal Zone, and, as far as possible, all work will be suspended on that day.

Geo. W. Goethals, *Chairman.*

Amendment to Criminal Procedure.

Culebra, C. Z., August 26, 1910.

Circular No. 276-a:

When an employe of the Isthmian Canal Commission, the Government of the Canal Zone, or the Panama Railroad Company, is required to sit in the trial of a criminal case as an associate of the Circuit Judge, as provided in Section 171 of the Code of Criminal Procedure of the Canal Zone, he shall be allowed his usual compensation for the time lost from work on his regular pay roll in the same manner as if present and performing his duty; he shall be furnished with transportation to and from the place of holding court, and his actual and necessary expenses at court will be provided for by the court, but he shall not be entitled to the $10 per day provided in Section 171 of Act No. 15 of the Laws of the Canal Zone.

Clerks of courts will issue a certificate showing the time employe is engaged as an associate to the Circuit Judge, and timekeepers will file such certificates with the time rolls.

Geo. W. Goethals,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Tool Rooms in Machine Shops.

Culebra, C. Z., August 26, 1910.

Circular No. 344:

The tool rooms in the Gorgona, Empire, Dry Dock, Balboa and Pedro Miguel machine shops will be fitted up for containing, in a systematic and orderly manner, drills, reamers, counterbores, taps, dies, milling cutters, lathe, planer, and shaper tools, and all other machine tools.

All tools will thereafter be kept in the tool room except when in use by workmen. Every tool issued to a workman will be charged to him during the time it is in his possession.

Upon the return of each tool to the tool room it will be ground and repaired, if necessary, in order that every tool issued will be sharp and ready for use.

Each of the above five shops is authorized to employ at not more than 10 cents per hour, one or more boys as messengers for drawing tools from the tool room and returning them for workmen.

Geo. W. Goethals, *Chairman.*

Classified Expenditure Accounts.

Empire C. Z., August 25, 1910.

Circular No. 27:

The following changes in classified expenditure accounts are hereby authorized effective July 1, 1910:

373. *Transportation on the Isthmus.*

A. Passenger Transportation.

To this account will be charged the monthly payment for transportation of employes over the rail lines of the Panama Railroad Company, and animal transportation to and from trains.

B. Freight.

To this account will be charged the payments for transportation of freight over the rail lines of the Panama Railroad Company.

386. *Freight, Advertising, and Miscellaneous Items.*

This account is abolished. See new account No. 392. Advertising and miscellaneous items formerly charged to account No. 386 will be charged to account No. 385.

389. *Corrals.*

A. Equipment.

B. Operation.

The balances remaining in the two subdivisions of this account will be absorbed monthly on the Chief Quartermaster's abstract of expenditures by charging accounts 385 and 388 on a basis of services rendered, and crediting account No. 389 A and B with the same amounts.

The following new accounts are authorized:

390. *Construction of Buildings, Department of Construction and Engineering.*

To this account will be charged expenses incurred in the construction of buildings for the Departments of Construction and Engineering, Quartermaster's, Subsistence, Examination of Accounts and Disbursements. It does not include "Division Structures," the expense of which should be charged directly against the construction work benefited. This account will include all other buildings of the departments named above not provided for under account No. 408. Commissary buildings will be charged to the Panama Railroad Company.

391. *Alteration and Repair of Buildings, Department of Construction and Engineering.*

To this account will be charged expenses incurred in the alteration and repair of buildings for the departments of Construction and Engineering, Quartermaster's, Subsistence, Examination of Accounts and Disbursements. It does not include alterations and repairs of "Division Structures," the expense of which should be charged to the construction work benefited; nor alterations and repairs provided for under accounts Nos. 381 and 409, nor alterations and repairs of Panama railroad commissary buildings.

392. *Operation of Docks and Wharves.*

A. By the Panama Railroad Company.

To this account will be charged services rendered by the Panama Railroad Company for stevedoring cargo.

B. By the Isthmian Canal Commission.

To this account will be charged all expenses incurred by the Isthmian Canal Commission in connection with the operation of docks and wharves, and credited with the revenues derived therefrom.

The following accounts are revised to read as follows:

408. *Construction of Buildings, Department of Construction and Engineering.*

To this account will be charged expenses incurred in the construction of the following buildings only: Gold and silver quarters, including baths, water closets and wash houses used in connection therewith; construction of clubhouses, lodge halls, churches, bandstands, and other buildings used for purposes of a general nature not directly connected with construction work. Commissary buildings will be billed against the Panama Railroad Company.

409. *Alterations and Repairs of Buildings, Department of Construction and Engineering.*

To this account will be charged all expenses of alteration and repair of the following buildings only: Gold and silver quarters, including baths, water closets and wash houses used in connection therewith; clubhouses, lodge halls, churches, bandstands, and any other buildings used for purposes of a general nature not directly connected with construction work. The ordinary alterations and repair of mess, kitchen and hotel buildings, including Hotel Tivoli, will be charged to this account. Alteration and repair of commissary buildings will be billed against the Panama Railroad Company.

W. W. Warwick,
Examiner of Accounts.

Approved: Geo. W. Goethals,
Chairman and Chief Engineer.

Empire, C. Z., August 25, 1910

Circular No. 28:

The following new classified expenditure account is authorized effective July 1, 1910:

423. *Permanent Plant.*

To this account will be charged the cost or proper proportion of the cost of plant which, though purchased for use in the construction of the Canal, will be used in its operation and maintenance after completion. No charge or credit will be made to this account except by direction of the Chief Engineer. The Examiner of Accounts will keep a detail of this account by units.

W. W. Warwick,
Examiner of Accounts.

Approved: Geo. W. Goethals,
Chairman and Chief Engineer.

At the Porto Bello Clubhouse.

The entertainment given on Saturday night, August 20, was thoroughly enjoyed. Mr. Sweet and Mr. Washburn, as blind and dumb colored musicians, gave an interesting sketch. Two three-minute boxing bouts were put on by Bowen and Sweeney, and Morales and Fleckstein. The mock wedding was voted as the best thing that has been given this season. Invitations had been issued and the people came well supplied with rice and "presents for the bride." The characters were as follows: Bride, Mr. Westervelt; groom, Mr. Washburn; bridesmaid, Mr. Cavanagh; best man, Mr. Geer; flower girls, Elizabeth Cornelison and Eva Sweet; pastor, Mr. Bucklin.

The Sunday schedule of trains on the Panama railroad will be in effect on Labor Day, Monday, September 5.

COMMISSARY DEPARTMENT.

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning September 1:

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	7
Shoulder, neck trimmed off, (4 lbs. and over), per pound	10
Entire forequarters (not trimmed) 10 pounds and over, per pound	9
Legs, (8 to 10 pounds), per pound	19
Cutlets, per pound	20
Shortcut chops, per pound	22
Lamb—Stewing, per pound	7
Entire forequarters, neck trimmed off, per pound	10
Legs (5 to 8 pounds), per pound	24
Chops, per pound	26
Cutlets, per pound	26
Veal—Stewing, per pound	10
Shoulder for roasting (not under 4 pounds), per pound	15
Loin for roasting, per pound	19
Chops, per pound	22
Cutlets, per pound	26
Pork cuts, per pound	22
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	9
Corned, per pound	12, 14, 16
Chuck roast, (3 pounds and over), per pound	13
Pot roast, per pound	15
Rib-roast, second cut (not under 3½ pounds), per pound	18
Rib-roast, first cut (not under 3 pounds), per pound	20
Sirloin roast, per pound	21
Rump roast, per pound	21
Porterhouse roast, per pound	21
Steak, Chuck, per pound	14
Round, per pound	15
Rib, per pound	20
Sirloin, per pound	21
Porterhouse, per pound	21
Rump, per pound	21
Tenderloin, per pound	24

MISCELLANEOUS.

Livers—Beef, per pound	10
Calf, each	60
Half, each	30
Sausage—Pork, per pound	17
Bologna, per pound	14
Frankfurter, per pound	14
Leberwurst, per pound	14
Sweet bread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	29
Eggs, fresh, ½ dozen only	16
Cod, fresh, per pound	7
Bluefish, fresh, per pound	14
Halibut, fresh, per pound	20

POULTRY AND GAME.

Chickens—Fancy Roasting, large, each	1.50
medium, each	1.30
Fowls, each	70, 82, 93, 1.04, 1.15
Ducks, large, each	1.50
medium, each	1.30
Broilers, each	75
Turkeys, per pound	30
Squabs, each	35
Capons, each	2.50
Pheasants, each	70, 1.00
Partridges, each	50
Grouse, each	85

CURED AND PICKLED MEATS.

Ham—English York Cut, per pound	30
German, Westphalia, per pound	36
Sugar cured, per pound	24
Sugar cured, sliced, per pound	27
Half, for boiling, per pound	25
Boiled, per pound	32
Hocks, per pound	‡8
Bacon—Breakfast, whole piece, per pound	30
Breakfast, sliced, per pound	31
Beef, salt, family, per pound	12
Pork, salt, family, per pound	18
Ox tongues, each	80
Pigs' feet, per pound	10
tongues, per pound	16
Mutton, mess, per pound	7

DAIRY PRODUCTS.

Butter—Creamery special, per pound	40
Cheese—Roquefort, per pound	38
Philadelphia Cream, cake	10
Young America, per pound	22
Swiss, per pound	26
Edam, each	1.00
Neufchatel, each	6
Gouda, per pound	34
Parmesan, per pound	35
Milk, Briarcliff, bottle	**25
Buttermilk, bottle	**15

VEGETABLES AND FRUITS.

	Price.
Celery, per head	*6
Lettuce, per head	*5, 7, 10
Cucumbers, per pound	5
Potatoes, white, per pound	†3½
sweet, per pound	2½
Yams, per pound	3½
Onions, per pound	*3½
Tomatoes, per pound	8
Turnips, per pound	3
Carrots, per pound	*3½
Beets, per pound	*3½
Cabbage, new, per pound	3½
Rhubarb, per pound	†6
Squash, per pound	*4
Apples, per pound	6
Grapes, per pound	10
Lemons, dozen	24
Plums, per pound	10
Watermelons, each	35
Canteloupes, each	08
Peaches, per pound	10
Pears, per pound	10
Huckleberries, per quart	20
Limes, per 100	80
Oranges, dozen	12

*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from Commissaries; no orders taken for delivery.

Rainfall, July 31 to August 27, 1910, Inclusive.

MIDNIGHT TO MIDNIGHT.

Stations.	Maximum in one day.	Date.	Total for period.
Pacific Section—	Ins.		Ins.
Ancon	4.12	24	11.96
Balboa	3.65	24	10.69
Miraflores	2.45	20	11.57
Pedro Miguel	2.48	7	9.32
Rio Grande	2.11	7	8.77
Central Section—			
Culebra	2.30	27	10.00
Camacho	1.90	27	10.52
Empire	2.21	27	9.58
Gamboa	1.37	12	8.26
Alhajuela	1.92	23	12.85
El Vigia	3.22	23	14.85
Gorgona	1.65	12	6.94
San Pablo	3.87	12	11.10
Tabernilla	3.43	12	10.25
Bohio	3.32	24	14.12
Monte Lirio	2.23	1	13.14
Atlantic Section—			
Gatun	3.65	20	12.83
Brazos Brook	2.95	12	13.11
Cristobal	3.33	12	14.41
Porto Bello	4.32	10	*20.53
Nombre de Dios	1.76	10	9.39

*To 5 p. m August 26.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, August 27, 1910. All heights are in feet above mean sea level.

Day and Date	Station.				
	Vigia	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun. August 21.	134.2	100.4	60.4	24.1	19.6
Mon. August 22	129.9	96.0	50.7	20.5	19.5
Tues. August 23	138.1	100.9	55.1	20.4	19.1
Wed. August 24.	136.2	100.0	54.9	21.1	19.3
Thurs. August 25	131.5	98.0	54.6	22.4	19.9
Fri. August 26	132.9	97.5	51.2	20.5	19.8
Sat. August 27	129.5	96.2	51.2	20.0	19.2
Height of low water	125.0	92.0	46.0		

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal, Colon and Balboa, during the week ending August 27, 1910:

Prinz Joachim, August 22, from New York, with 293 cases valve oil, 60 bundles bolts, 16 cases bolts for stock.

Carham, August 22, from Jacksonville, with 290 pieces piling for stock; 1,452,531 feet B. M. yellow pine lumber for Mechanical Division.

Allianca, August 23, from New York, with 26 cases electrical material, 2 pumps, motors and parts, 15 reels cable, 15 cases rubber boots for Atlantic Division; 24 pieces castings for Central Division; 8 cases rubber boots, 7 cases valves, 6 crates concrete machinery for Pacific Division; 1,620 pieces castings, 190 bundles castings, for Mechanical Division; 267 bundles cross bars, 28 cases picks, 21 barrels glassware, 15 rolls leather, 525 kegs bolts, 20 kegs screws, 313 cases valve oil, 25 barrels iron pipe-fittings, 82 pieces iron pipe-fittings for stock; and a miscellaneous cargo, the whole consisting of 3,656 packages, weighing 325 tons.

Cuzco, August 23, from Tacoma, with 120,013 feet B. M. fir lumber for Atlantic Division; 591,876 feet B. M. fir lumber and 597 cross-ties for stock.

Turrialba, August 25, from New Orleans, with 319 tons dump car parts for Cristobal shops (for erection); 87 pieces piling for Atlantic Division; 252,612 feet B. M. yellow pine lumber, 110,022 feet B. M. oak lumber, 792 pieces car stakes, 534 crates fire brick for stock.

Zacapa, August 26, from New York, with 14 kegs wrought iron spikes, 14 cases pump parts for Atlantic Division; 73 cases tape fuse, 11 barrels drift bolts, 6 half barrels drift bolts for stock.

Misdirected Letters.

ANCON, C. Z., August 31, 1910.

The following insufficiently addressed letters originating in the United States and its possessions, have been received in the office of the Director of Posts, and may be secured upon request of the addressee:

Billep, Mrs. Carl
Campbell, Hugh (pkg.)
Garrigues, J. Pierpont
Gihrey, A. N.
Hayes, Jas.
Hayward, Thos. W.
Hersfeld, Herman (2)
Hill, Mrs. Hellen
Levy, Leo
Maynard, Wm.
McKaig, Mrs. M. E.
McPeek, W.
Nicholas, Henry
Nicol, H.
Pedrache, Leon Y. (pkg.)
Powell, Robert (pkg.)
Quintero, A. B.
Rovana, Juana
Ruggles, Mrs. M. V.
Sanger, Walter M
Snapp, B. M.
Stevenson, A. D.
Stolz, Capt. E.
Thompson, Lawrence M.
Watson, Burt

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending September 7, 1910, (75th meridian time):

Date.	High.	Low.	High.	Low.
	A. M.	A. M.	P. M.	P. M.
September 1	1.39	7.49	2.00	8.15
September 2	2.38	8.47	2.57	9.08
September 3	3.27	9.35	3.45	9.54
September 4	4.10	10.20	4.28	10.37
September 5	4.49	11.00	5.08	11.17
September 6	5.26	11.38	5.44	11.53
September 7	6.00	P. M. 12.15	6.18	.....

Band Concert.

The Isthmian Canal Commission Band will give a concert at Gatun, C. Z., on Sunday, September 4, 1910, at 2 p. m. The program follows:

1 March—*The Annihilator*..........Clement
2 Selection—*A Trip to Japan*..........Klein
3 Waltz—*Love Sparks*..........Holzman
4 Overture—*Amazon*..........Kiesler
5 Barn Dance—*By the Light of the Silvery Moon*..........Edwards
6 Patrol—*American*..........Meacham
7 Medley Selection—*Mills'* 1910..........Schultz
Introducing "Lily of the Prairie," "I'd Like to be the Fellow That Girl Is Waiting For," "Highland Mary," "Everybody's Happy When the Moon Shines," "You For Me When You're Sweet Sixteen," "Comical Eyes," "Sicilian Chimes," "My Friend Jim-a-da-Jeff," and "Margarita."
8 Intermezzo—*The Flower Girl*..........Wenrich
9 Oriental Rag—*Turkish Trophies*..........Egan
10 March—*Put On Your Old Gray Bonnet*..........Wenrich

CHAS. E. JENNINGS, *Musical Director.*

The next concert will be given at Hotel Tivoli, Ancon, September 11, at 7.30 p. m.

Sale of Buildings at Cunette.

There will be sold at public auction by the District Quartermaster at Empire, C. Z., on the premises, at 3 p. m., Wednesday, September 7, 1910, to the highest bidder for cash, the following Isthmian Canal Commission property:

Buildings Nos. 243 and 244, laborers' barracks, at Cunette (Empire).

These buildings will be removed from the premises by the successful bidder, within sixty (60) days from date of sale. The Government reserves the right to accept or reject any or all bids. For further information apply to the District Quartermaster, Empire, C. Z.

R. E Wood, *Acting Chief Quartermaster.*

The following vessels arrived at and departed from the port of Balboa during the week ending August 27:

Arrivals—August 20, *Arica*, from Guayaquil; August 21, *Ucayali*, from south ports; August 22, *Peru*, from south ports, *Acapulco*, from San Francisco, *Chiriqui*, from Buenaventura and Tumaco; August 23, *Cuzco*, from Seattle with lumber.

Departures—August 21, *Trinculo*, to Port Harford; August 23, *Limari*, to south ports; August 24, *Pennsylvania*, to San Francisco, *Arica*, to Guayaquil; August 27, *Ucayali*, to south ports.

CANAL DIRECTORY.

ISTHMIAN CANAL COMMISSION.

Col. Geo. W. Goethals, U. S. A., Chairman, Culebra.
Lieut.-Col. H. F. Hodges, U. S. A., Culebra.
Lieut.-Col. D. D. Gaillard, U. S. A., Empire.
Lieut.-Col. Wm. L. Sibert, U. S. A., Gatun.
Civil Engineer H. H. Rousseau, U. S. N., Culebra.
Col. W. C. Gorgas, U. S. A., Ancon.
Mr. Maurice H. Thatcher, Ancon.
Mr. Joseph Bucklin Bishop,
Secretary, Ancon.

DEPARTMENTS.

Construction and Engineering.

Headquarters, Culebra.

Col. Geo. W. Goethals, Chairman and Chief Engineer.
William Howard May, Secretary to the Chairman.
C. A. McIlvaine, Chief Clerk.
John K. Baxter, Assistant Chief Clerk.
H. S. Farish, Surveying Officer.
Caleb M. Saville, Assistant Engineer.

Lieut.-Col. H. F. Hodges, Assistant Chief Engineer.
C. O. Carlson, Secretary.
Edward Schildhauer, Electrical and Mechanical Engineer.
Henry Goldmark, L. D. Cornish, H. F. Tucker, T. B. Mönniche, Edward C. Sherman, Designing Engineers.

Civil Engineer H. H. Rousseau, Assistant to the Chief Engineer.
J. C. Parsons, Secretary.
Maj. T. C. Dickson, Inspector of Shops.
A. B. Nichols, Office Engineer.
James G. Craig, Senior Traveling Engineer.
Arthur C. Stone, D. E. Irwin, Traveling Engineers.

Central Division.

Headquarters, Empire.

Lieut.-Col. D. D. Gaillard, Division Engineer.
A. E. Bronk, Chief Clerk.
Geo. A. Greenslade, Gen. Supt. Construction.
A. S. Zinn, Resident Engineer.
Mark W. Tenny, Assistant Engineer.
W. L. Thompson, Assistant Engineer.
J. W. Sneed, Superintendent Construction.
J. M. Hagan, Superintendent Construction.
Joseph Little, Superintendent Construction.
W. T. Reynolds, Superintendent Construction.
A. Sessions, Superintendent Transportation.
William H Bates, Supt. Steam Shovel Repairs.
Dan E. Wright, Supt. Municipal Work and Pipe Lines.

Atlantic Division.

Headquarters, Gatun.

Lieut.-Col. Wm. L. Sibert, Division Engineer.
Maj. Chester Harding, U. S. A., Assistant Division Engineer.
R. M. Sands, Chief Clerk.
Maj. Edgar Jadwin, U. S. A., Resident Engineer.
Maj. J. P. Jervey, U. S. A., Resident Engineer.
Maj. G. M. Hoffman, U. S. A., Resident Engineer.
Capt. Horton W. Stickle, U. S. A., Assistant Engineer.
Geo. M. Wells, Office Engineer.

Pacific Division.

Headquarters, Corozal.

S. B. Williamson, Division Engineer.
John M. G. Watt, Assistant Division Engineer.
J. C. Keller, Chief Clerk.
W. G. Comber, Resident Engineer.
W. B. Corse, Resident Engineer.
H. O. Cole, Assistant Engineer.
Frank Cotton, Assistant Engineer.
James Macfarlane, Supt. of Dredging.

Gorgona Shops.

Headquarters, Gorgona.

A. L. Robinson, Superintendent Mechanical Division.
William Taylor, Chief Clerk.
J. H. Flynn, Mechanical Engineer.

Subsistence.

Headquarters, Cristobal.

Maj. Eugene T. Wilson, U. S. A., Subsistence Officer.
Lieut. Frank O. Whitlock, U. S. A., Assistant Subsistence Officer.
W. F Shipley, Chief Clerk.
John Burke, Manager of Commissaries.

Quartermaster's.

Headquarters, Culebra.

Lieut.-Col. C. A. Devol, U. S. A., Chief Quartermaster.
Lieut. R. E. Wood, U. S. A., Assistant Chief Quartermaster.
Lieut. Walter D. Smith, U. S. A., Constructing Quartermaster.
C. H. Mann, Chief Clerk.
C. C. McColley, Inspector
Capt. C. Nixon, U. S. A., Depot Quartermaster, Mount Hope.
C. L. Parker, Assistant Depot Quartermaster, Mount Hope.
Chas. R. Bryon, Storekeeper, Gatun.
C. B. Sexton, Acting Storekeeper, Gorgona.
F. W. Miracle, Storekeeper, Empire.
Robert Wuerz, Storekeeper, Miraflores.
R. K. Morris, Storekeeper, Balboa.

District Quartermasters.

B. C. Poole, Ancon and Balboa.
A. R. Bennett, Corozal and Miraflores.
J. T. Smith, Pedro Miguel and Paraiso.
H. F. Sedwick, Culebra.
W. G. Ross, Empire.
J. M. King, Las Cascadas and Bas Obispo.
R. C. Shady, Gorgona.
J. H. K. Humphreys, San Pablo, Mamei, Tabernilla and Bohio.
R. M. Gamble, Gatun.
Roy R. Watson, Cristobal and Toro Point.
Chas. D. Morgan, Porto Bello and Nombre de Dios.

Civil Administration.

Headquarters, Ancon.

Maurice H. Thatcher, Head of the Department.
G. A. Ninas, Chief Clerk.

Tom M. Cooke, Chief, Division of Posts, Customs and Revenues, Ancon.
Arthur McGown, Deputy Collector, Ancon.
Jno. L. Storla, Deputy Collector, Cristobal.
Frank Feuille, Counsel and Chief Attorney, Ancon.
W. K. Jackson, Prosecuting Attorney, Ancon.
J. P. Fyffe, Chief of Police, Ancon.
Lieut. Chas. W. Barber, U. S. A., Assistant Chief of Police, Ancon.
C. E. Weidman, Fire Chief, Cristobal.
Geo. H. Ruggles, Supt of Public Works, Ancon.
J. J. Reidy, Acting Supt. Public Works, Ancon.
F. A. Gause, Superintendent of Schools, Ancon.
Edgar P. Beck, Treasurer of Canal Zone, Empire.
W. G. Comber, Chairman; James Macfarlane, Louis Untermann, Board of Local Inspectors.

Canal Zone Judiciary.

Headquarters, Ancon.

Supreme Court—H. A. Gudger, Chief Justice.
Walter Emery, Clerk, Ancon.
Lorin C. Collins, Associate Justice, Cristobal.
Wesley M. Owen, Associate Justice, Empire.
Circuit Court, First Circuit—H. A. Gudger, Judge, Ancon.
Walter Emery, Clerk.
Circuit Court, Second Circuit—Wesley M. Owen, Judge, Empire.
Elbert M. Goolsby, Clerk.
Circuit Court, Third Circuit—Lorin C. Collins, Judge, Cristobal.
Nelson R. Johnson, Clerk.
M. C. Kerdell, Senior District Judge, Cristobal.
S. E. Blackburn, District Judge, Ancon.
Edgar S. Garrison, District Judge, Empire.
J. B. March, District Judge, Gorgona.
Thomas E. Brown, Jr., District Judge, Cristobal.

Sanitation.

Headquarters, Ancon.

Col. W. C. Gorgas, Chief Sanitary Officer.
Lieut.-Col. John L. Phillips, U. S. A., Assistant Chief Sanitary Officer.
Maj. Robert E. Noble U. S. A., General Inspector.
Harry E. Bovay, Chief Clerk.

Lieut.-Col. Charles F. Mason, U. S. A., Superintendent Ancon Hospital, Ancon.
Surgeon Wm. H. Bell, U. S. N., Superintendent Colon Hospital, Cristobal.
Surgeon J. C. Perry, P. H. and M. H. S., Chief Quarantine Officer, Ancon, and Health Officer, Panama.
Surgeon Claude C. Pierce, P. H. and M. H. S. Quarantine Officer, Colon.
Dr. Fleetwood Gruver, P. H. and M. H. S., Quarantine Officer, Panama.
Joseph A. LePrince, Chief Sanitary Inspector, Ancon.
Dr. M. E. Connor, Health Officer, Colon.

Disbursements.

Headquarters, Empire.

Edward J. Williams, Disbursing Officer.
Wm. M. Wood, Assistant Disbursing Officer.

Examination of Accounts.

Headquarters, Empire.

W. W. Warwick, Examiner of Accounts.
T. L. Clear, Assistant Examiner of Accounts.

Purchasing Department.

Headquarters, Washington, D. C.

Capt. F. C. Boggs, U. S. A., General Purchasing Officer.
C. E. Dole, Chief Clerk.

Capt. Courtland Nixon, Purchasing Agent on the Isthmus.
Maj. Wendell L. Simpson, U. S. A., Assistant Purchasing Officer, 24 State Street, New York City.
Lieut-Col. Geo. B. Davis, U. S. A., Assistant Purchasing Agent, 55 National Realty Building, New Orleans, La.

Panama Railroad Company.

Headquarters, Colon.
(General offices, 24 State Street, New York.)

J. A. Smith, General Superintendent, Colon.
Lieut. Frederick Mears, U. S. A., Chief Engineer.
A. K. Stone, Master of Transportation.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company, of the Royal Mail Steam Packet Company, of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Advance	P. R. R.	Monday	Aug. 29
Panama	P. R. R.	Saturday	Sept. 3
Allianca	P. R. R.	Saturday	Sept. 10
Colon	P. R. R.	Saturday	Sept. 17
Advance	P. R. R.	Friday	Sept. 23
Panama	P. R. R.	Thursday	Sept. 29
Allianca	P. R. R.	Wednesday	Oct. 5
Colon	P. R. R.	Tuesday	Oct. 11
Advance	P. R. R.	Monday	Oct. 17
Panama	P. R. R.	Saturday	Oct. 22
Allianca	P. R. R.	Friday	Oct. 28

CRISTOBAL TO NEW YORK.

Colon	P. R. R.	Monday	Sept. 5
Advance	P. R. R.	Saturday	Sept. 10
Panama	P. R. R.	Friday	Sept. 16
Allianca	P. R. R.	Thursday	Sept. 22
Colon	P. R. R.	Thursday	Sept. 29
Advance	P. R. R.	Wednesday	Oct. 5
Panama	P. R. R.	Tuesday	Oct. 11
Allianca	P. R. R.	Monday	Oct. 17
Colon	P. R. R.	Sunday	Oct. 23
Advance	P. R. R.	Saturday	Oct. 29

NEW YORK TO COLON.

Almirante	U. F. C.	Thursday	Aug. 25
Prinz Aug. Wilhelm	H.-A.	Saturday	Aug. 27
Santa Marta	U. F. C.	Thursday	Sept. 1
Magdalena	R.-M.	Saturday	Sept. 3
Metapan	U. F. C.	Thursday	Sept. 8
Prinz Joachim	H.-A.	Saturday	Sept. 10
Zacapa	U. F. C.	Thursday	Sept. 15
Clyde	R.-M.	Saturday	Sept. 17
Almirante	U. F. C.	Thursday	Sept. 22
Prinz Aug. Wilhelm	H.-A.	Saturday	Sept. 24
Santa Marta	U. F. C.	Thursday	Sept. 29
Atrato	R.-M.	Saturday	Oct. 1
Metapan	U. F. C.	Thursday	Oct. 6
Tagus	R.-M.	Saturday	Oct. 15

COLON TO NEW YORK.

Zacapa	U. F. C.	Friday	Sept. 2
Clyde	R.-M.	Wednesday	Sept. 7
Almirante	U. F. C.	Friday	Sept. 9
Prinz Aug. Wilhelm	H.-A.	Tuesday	Sept. 13
Santa Marta	U. F. C.	Friday	Sept. 16
Atrato	R.-M.	Wednesday	Sept. 21
Metapan	U. F. C.	Friday	Sept. 23
Prinz Joachim	H.-A.	Tuesday	Sept. 27
Zacapa	U. F. C.	Friday	Sept. 30
Tagus	R.-M.	Wednesday	Oct. 5
Almirante	U. F. C.	Friday	Oct. 7

NEW ORLEANS TO COLON.

Abangarez	U. F. C.	Saturday	Aug. 27
Atenas	U. F. C.	Saturday	Sept. 3
Turrialba	U. F. C	Saturday	Sept. 10
Abangarez	U. F. C.	Saturday	Sept. 17
Atenas	U. F. C.	Saturday	Sept. 24
Turrialba	U. F. C.	Saturday	Oct. 1

COLON TO NEW ORLEANS.

Abangarez	U. F. C.	Thursday	Sept. 8
Atenas	U. F. C.	Thursday	Sept. 15
Turrialba	U. F. C.	Thursday	Sept. 22
Abangarez	U. F. C.	Thursday	Sept. 29
Atenas	U. F. C.	Thursday	Oct. 6

COLON TO BARBADOS, CALLING AT TRINIDAD.

Magdalena	R.-M.	Tuesday	Sept. 13
Clyde	R.-M.	Tuesday	Sept. 27

The next sailing of the Leyland Line will be as follows: *Memphian*, on or about September 11 for New Orleans, via Kingston, Ja.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, SEPTEMBER 7, 1910. No. 2.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications

THE CANAL RECORD

Ancon, Canal Zone,

Isthmus of Panama.

No communication either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Empire-Paraiso Highway Open.

The section of the transisthmian highway between Paraiso and Empire has been completed and is open to traffic. It is 18,302 feet long, 18 feet wide on the sub-grade, and has a metaled surface 12 feet wide. It runs along the east side of Culebra Cut from the suspension bridge at Empire to a point opposite Culebra, where it turns eastward in order to run back of Gold Hill into Paraiso. Work on the section to join Paraiso with Corozal has been resumed, and when this link is completed there will be a wagon road from Panama to Gorgona, nearly half-way across the Isthmus.

The Empire-Paraiso road was built by penitentiary convicts under the direction of the municipal engineering section of the Central Division. They excavated 17,457 cubic yards of material for the sub-grade and placed all the metal, 8,650 feet of the length being covered with 2,563 cubic yards of gravel, and 9,652 feet with 2,860 cubic yards of stone. The prisoners were 53 days in preparing the sub-grade, collecting from the sides of the road, breaking, and spreading the stone.

Rainy Season Excavation Record.

All previous records for excavation in the rainy season were broken in the Central Division and in Culebra Cut during the month of August, when 1,377,992 cubic yards of rock and earth were taken out of the Cut and 234,404 cubic yards from the Chagres section. A comparison of the work in August of previous years, with the previous high record for the rainy season, that of October, 1908, and the high record for the dry season, that of March, 1910, follows:

Month.	Culebra Cut.	Chagres Section.	Total.
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*
August, 1907...	786,866	2,900	789,766
August, 1908...	1,173,800	366,810	1,540,610
August, 1909...	1,113,370	231,543	1,404,913
August, 1910...	1,377,992	234,404	1,612,396
October, 1908...	1,160,101	424,911	1,585,012
March, 1910....	1,509,728	484,846	1,994,574

The rainfall at four stations in the Central Division during each of the months referred to above was as follows:

Month.	Bohio	Gamboa	Empire	Rio Grande
	Ins.	*Ins.*	*Ins.*	*Ins.*
August, 1907...	9.10	12.69	11.24	11.41
August, 1908...	20.50	11.84	8.11	7.65
August, 1909...	10.01	7.03	7.20	9.12
October, 1908..	14.25	8 90	8.87	8.59
March, 1910...	6.60	3.12	1.60	1.69
August, 1910...	14.84	10.66	10.08	8.98

The August record was made with a reduction in transportation cost of over $11,000, due to the fact that more cars were handled in each train than in August of previous years. Of the total, 147,420 cubic yards of rock and earth were hauled from Culebra Cut to Gatun Dam, a distance of 26 miles.

In Culebra Cut, all previous records for the rainy season were also broken, and in only two dry season months, March, 1909 and 1910, has the excavation accomplished in August been surpassed. A statement of the months in which the excavation from the Cut has amounted to more than 1,300,000 cubic yards, and the rainfall at Empire, follows:

Months.	Excavation.	Rainfall at Empire.
	Cubic Yards.	*Inches.*
March, 1909............	1,434,597	0.21
October, 1909...........	1,302,901	21.14
January, 1910...........	1,323,693	0.70
March, 1910............	1,509,728	1.60
June, 1910..............	1,305,141	10.14
August, 1910............	1,377,992	10.08

The amount of material excavated and the amount remaining to be excavated on September 1, are as follows:

	Culebra Cut.	Chagres Section.	Total.
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*
Excavated...	51,826,868	9,920,987	61,747,855
Remaining...	32,359,856	3,017,307	35,377,163

First Year of Lock Building at Pedro Miguel.

The first concrete was laid in the Pedro Miguel Locks on September 1, 1909, one year ago last Thursday, and in the year a total of 261,964 cubic yards had been placed, leaving about 575,500 remaining to be laid. Concrete operations at these locks were begun with the small mixers now in use at Miraflores Locks. Later, two stationary auxiliary mixers were installed, one on the east, and the other on the west bank, and were kept in operation until the permanent handling plant was erected and placed in service. All the concrete in the south guide wall, a large section of the floor and culverts in the west chamber, and a part of the west side and center walls were produced by the auxiliary mixing plant. On July 6, 1910, the two berm cranes, each containing two 2-cubic yard mixers, and three of the four chamber cranes were placed in operation, and about a week later the fourth chamber crane was ready for service. During the latter part of July, construction of the east side wall was commenced, and since that time considerable progress on the two side walls and the center wall has been made, a part of the west side wall being up to its permanent height.

The record for each of the 8-hour working days of the week ending September 3, and the total laid to that date, follow:

Date	Concrete placed.	Large stone.	Hours worked.	No. of mixers	Total.
August 29.	1,576	28	24.00	4	1,604
August 30.	2,030	48	34.00	4	2,078
August 31.	2,150	......	32.00	4	2,150
Sept. 1...	1,928	30	26.00	4	1,958
Sept. 2...	2,018	40	28.00	4	2,058
Sept. 3...	2,208	20	33.50	4	2,228
Total...	11,910	166	177.50	4	12,076
Previously reported.	....	2,759	....	......	256,132
Total...		2,925			268,208

Concrete Mixers for Culebra Cut.

The work of placing concrete in the sides of Culebra Cut will be begun as soon as mixing plants, for which the Central Division has placed a requisition, can be delivered from the States. The first concrete placed will be in retaining walls on the east side of the Cut at both ends, Bas Obispo and Paraiso, where the excavation has advanced far enough to permit the construction of the walls. These walls will be built on the berm at 95 feet above sea level, and will keep material from sliding down the bank into the channel of the Canal. In the plant on requisition, two one-yard mixers are specified, one to dump into a portable placing tower, and the other to dump into buckets which will be handled by crane. The work at Paraiso and Bas Obispo will give an opportunity to test the efficiency of the two methods of placing concrete.

Both plants will consist of three units—the mixers, the placers, and the storage bins. The mixers will be rotary, discharge by tilting while running, equipped with automatic water tank with a gage so set as to measure a uniform quantity of water into each batch of concrete, capacity 27 to 31 cubic feet per batch, and from 30 to 35 cubic yards of concrete an hour, to be run by steam power, soft coal burner.

In the portable tower plant the mixer and tower will be mounted on a specially constructed flat car, 10 or 12-foot gage, constructed with necessary end timbers, so that couplers can be attached to allow the hauling or pushing of the car along the retaining wall by a switch engine. The mixer will be equipped with power charging attachment, or side loader, with frame extended so as to allow the skip to be dropped to the ground level for a low-feed level. The elevator will be run on a steel tower so constructed that it can be shipped in several parts and assembled on the Isthmus. The mixer will discharge into a bucket which can be raised to any height up to 55 feet and tipped, so as to deposit the concrete in the wall at any point. The elevator

NOTES OF PROGRESS.

(Continued.)

will be operated by a hoisting engine, and both it and the mixer will be supplied with steam from the same boiler.

The mixing plant with side discharge, so as to dump into a bucket to be handled by a locomotive crane, will be mounted on a standard Canal flat car. On one side will be a side loader, with frame extended downward to permit the assembling of the batch of rock, sand and cement in the skip on the track level. The mixer and side loader will be operated by the same engine. The mixer will discharge on the opposite side of the flat car into a receiving hopper or temporary chute, with a capacity of two batches of concrete. This hopper will be so attached that it can be taken off in case it is desired to discharge direct into the footings of the retaining wall through a wooden chute, to be supplied by the Commission.

High grade material must be used in both plants, and the equipment must be made strong enough to stand hard, continuous usage for three or four years. The steel must be well cleaned by sandblast and given a coat of red lead before shipment. The contractor will furnish instructions for erecting the plant and keeping the equipment in order.

The material bins for sand, rock and cement will be constructed by the Commission. They will be portable, built upon a Canal flat car, and will spout the materials to the side loader skip by which they will be conveyed to the mixers.

Ancon Crusher.

A statement of the rock crushed at Ancon quarry during the week ending September 3 follows:

Date.	Hours worked.	Cubic Yards.
August 29	7:55	2,760
August 30	6:50	2,250
August 31	7:40	2,550
September 1	8:15	2,925
September 2	8:15	2,580
September 3	8:05	2,745
Total	47:00	15,810

Part of Relocated Line in Use.

That part of the relocated line of the Panama railroad, between the south end of Culebra Cut and Corozal, was opened to regular traffic on September 4, and henceforth the old line of the railroad betwen those points will be used principally by construction trains. New stations have been erected on the new line at Pedro Miguel and Miraflores. The relocation in this section is necessary because the old line between the south end of Culebra Cut and Miraflores Locks will be covered by water upon the completion of the Canal, when the surface of the lake at Miraflores will be 55 feet above sea level. The new line is practically parallel with the old. It runs on an embankment through the lake territory, passes through Miraflores ridge in a tunnel 736 feet long, and then crosses the Canal dump between Miraflores and Corozal, joining the old line at Corozal. It is about 4½ miles long. Upon the completion of the Canal, the locks at Pedro Miguel and Miraflores, Miraflores Lake, and part of the channel, between Miraflores Locks and the Pacific entrance, can be seen from trains passing over this section of the railroad.

Lock Work at Gatun.

The construction plant at Gatun Locks was shut down at 1.35 o'clock in the afternoon of August 31, on account of lack of water, due to a break in the main. Work was resumed at the usual hour the following morning. A statement of the concrete laid in the locks during the week ending September 3, and the total to that date, follows:

Date.	Cubic Yards.			
	Construction plant.	Auxiliary plant.	Large stone.	Total.
August 29	2,244	900	381	3,525
August 30	2,182	912	276	3,370
August 31	1,190	964	183	2,337
September 1	2,082	908	239	3,229
September 2	2,030	962	319	3,311
September 3	1,978	966	305½	3,249½
Total	11,706	5,612	1,703½	19,021½
Previously reported	....	....	....	674,076½
Grand total	....	....	....	693,098

Miraflores Locks.

The two 2-cubic yard concrete mixers in the west storage trestle at Miraflores Locks were placed in service on Friday, September 2, and on Saturday their combined output was 206 cubic yards, an average of over 100 cubic yards to each mixer. The record for the six 8-hour working days of the week ending September 3 at these locks, and the total laid to date, follows:

Date	Auxiliary Plant.				
	½-Cubic yard mixers.	⅓-Cubic yard mixer.	2-Cubic yard mixers.	Large stone.	Total.
Aug. 29.	207	55	....	12	274
Aug. 30.	166	44	....	10	220
Aug. 31.	123	56	....	......	179
Sept. 1.	185	42	....	......	227
Sept. 2.	217	11	94	......	322
Sept. 3.	188	61	206	......	455
Total.	1,086	269	300	22	1,677
Previously reported	....	....	....	253	10,467
Grand total.	....	....	....	275	12,144

H. S. Farish, surveying officer of the Commission, has been appointed surveying officer for the Panama railroad.

STATEMENT OF CLASSIFIED EXPENDITURES TO JULY 31, 1910.

	Department of Civil Administration.	Department of Sanitation.	Department of Construction and Engineering.	General Items.	Total.
Total to June 30, 1909	$3,427,090.29	$9,673,539.28	$69,622,561.42	$78,022,606.10	$160,745,797.09
Total, fiscal year 1910	709,351.37	1,803,040.95	26,300,167.05	2,863,088.83	31,675,648.20
July, 1910	58,474.88	156,006.64	2,216,849.78	280,015.85	2,711,347.15
Total	$4,194,916.54	$11,632,586.87	$98,139,578.25	$81,165,710.78	$195,132,792.44

P. R. R. STEAM SHOVELS.

High Records by 70-ton Shovels on Relocation Work.

A statement is appended showing the excavation accomplished by steam shovels on the relocation of the Panama railroad each month since January, 1910. All these shovels are of the 70-ton class, and their average output is very high for work on the Isthmus. The August record was made in one of the wettest months of the rainy season.

Month	Output.	Average No of shovels	No. of working days.	Output per shovel.	
				Per day.	Per month.
	Cu. Yds.			*Cu. Yds.*	*Cu. Yds.*
January	206,334	8.24	25	1,002	25,040
Feb.	214,411	7.91	23	1,179	27,106
March	234,571	7.31	26	1,234	32,089
April	212,097	7.15	26	1,140	29,648
May	212,135	7.88	25	1,077	26,921
June	236,689	8.00	26	1,138	29,586
July	197,069	7.44	25	1,060	26,488
August	250,341	7.04	27	1,318	35,575

In the month of August the following records were made:

Shovel No.	Cubic Yards.		
	Earth.	Rock.	Total.
105	33,940	4,090	38,030
110	34,205	13,200	47,405
121	40,380	3,850	44,230
123	36,030	....	36,030

These records are among the best ever made on the Canal on railroad work.

The best record for one day was 2,890 cubic yards made by shovel No. 110.

Rock Output at Porto Bello.

A statement of the work done at Porto Bello crusher, by days, for the week ending September 3, follows:

Date.	Hours worked.	Cubic Yards.
August 29	11:47	2,077
August 30	12:35	3,045
August 31	10:20	2,641
September 1	15:55	3,749
September 2	8:40	2,055
September 3	15:05	3,705
Total	74:22	17,272

Concrete Laying in Gatun Spillway.

The amount of concrete placed in the spillway of Gatun Dam in the week ending September 3, with the total to that date, follows:

Date.	Cubic Yards.		
	Concrete	Large rock.	Total.
August 29	122	6	128
August 30	122	15	137
August 31	88	18	106
September 1	146	15	161
September 2	128	....	128
September 3	150	....	150
Total	756	54	810
Previously reported	....	....	90,352
Grand total	....	....	91,162

The regulations for the construction of buildings by private persons have been submitted for revision to a committee composed of a representative from each of the three construction divisions, the Department of Civil Administration, the Department of Sanitation, and the Quartermaster's Department.

GARBAGE DISPOSAL.

Method of Collection and Disposal in Canal Zone, Panama and Colon.

The disposal of the garbage that is collected daily in the Canal Zone settlements and the cities of Panama and Colon is accomplished in several ways. The method used in the two Panamanian cities is to dump it in a waste place, where it is burned, leaving piles of ashes, and other refuse which serve to build up and reclaim the land. The plan largely obtaining in the Canal Zone towns is to reduce the garbage as far as posssible to char and ashes by means of incinerators. In some of the villages the garbage is hauled to out-of-the-way spots and there burned and buried: and in the towns bordering on the Chagres River, the disposition is easily made by dumping all refuse into that stream. At one point, Porto Bello, it is taken out to sea and dumped.

When measures for taking care of the garbage were first instituted, they were entirely in the hands of the Department of Sanitation. On September 1, 1908, the work was taken over by the Quartermaster's Department, excepting in the cities of Panama and Colon, but the cost continues to be paid from the appropriation for sanitation. Up to January 1, 1907, street sweeping and garbage collecting in the city of Panama were handled by the Sanitary Department forces, but on that date according to mutual agreement the work was turned over to the Panama Government. Under this arrangement the Department of Sanitation pays to the Panama Government the sum of $10,000 annually, which, it is estimated, represents about one-half of the yearly cost of garbage collecting and street sweeping. In Colon one-half of the cost of collecting the garbage is borne by the Panama Government, and bills for the service are presented quarterly. The work there, and in Cristobal, is under the supervision of the local health office.

Garbage cans in two sizes, one 25 inches high and 18 inches in diameter, and the other 19 inches high and 15 inches in diameter, costing on an average about $2.28 and $1.49 each, respectively, are furnished to all business places and dwellings in Colon, and all native houses, stores and employes' quarters in the Canal Zone settlements. In Panama, where the street cleaning and garbage collecting are in the hands of the municipal authorities, containers are provided by the city. These cans are strongly made, the body of 22 gage steel, and the lids and bottoms of 20 gage steel. In addition, they are strengthened with bands around the top and bottom.

East of Panama, forming a part of the outlying district of Trujillo, is a large tract of swampy ground where all the garbage collected in Panama and Ancon is dumped, the fires in the slowly burning heaps continuing day and night. As time passes the land is gradually reclaimed and when a certain height is reached the dump is extended eastwardly into the swamp. Practically the same method of handling prevails in Colon, as in Panama, the site of the dumping ground, known as the Ninth street dump, lying to the east of the city, adjacent to the section shortly to be filled in and improved. At this point also, much land has been reclaimed.

All the larger towns in the Zone are provided with incinerating plants, some purchased in the States, others built on the Isthmus from old material. The imported incinerators are nearly all of a uniform type, but of varying capacity, and most of them were made by the Morse-Bulger Destructor Company of New York City. The towns of Miraflores, Paraiso, Culebra, Empire, Las Cascadas, Gorgona, Tabernilla and Gatun have plants of this type, while those at Balboa, Corozal and Pedro Miguel have been erected on the spot from ready-to-hand materials. The incinerator at Empire, installed about a year ago, offers the best type on the Isthmus of a small, modern plant. The original plant, which it replaced, was the first one in use on the Isthmus and had a capacity of 60 cubic yards daily, as compared with 480 cubic yards daily, the capacity of the new outfit. It is now doing duty at Miraflores. At the time the Empire plant became inadequate to take care of all the garbage, the plan was tried of carrying it away in railroad dump cars. The method worked successfully and shipments were made at the rate of about one car a day at a cost no higher than that of incineration. The location of the dumping ground, was between Golden Green and West Culebra, but as the Central Division decided to stop dumping there this plan of disposing of the garbage had to be abandoned and the purchase of a new and much larger incinerator was made necessary.

The rapid growth of Gatun has necessitated better facilities for the disposal of garbage, and a new incinerator has recently been received to replace the small one now in use. At present some of the garbage collected in the vicinity of the spillway is thrown into the river.

The plant at Corozal, designed by the local sanitary inspector, and the one at old Balboa, are representative of the locally constructed type. Their cost was small and they have given excellent results. The Corozal plant is built largely of discarded iron plates and old French rails imbedded in concrete, with a brick base for the smokestack. The interior is divided into three compartments, an ash box, a fire box and a receptacle for the garbage which is supplied from the top by removing a loose iron plate. The method ordinarily employed in operating the incinerators is to build a wood fire to assist in drying out the garbage, which is usually in a sodden state when first received. As fast as the garbage dries it is raked over and made to fall into the furnace, where it furnishes fuel to continue the process. The gas from the garbage accumulates in another part of the furnace and also assists in the general work of reduction. The ashes and noncombustible articles fall into the ash box and from there are carried away in wheelbarrows.

At Camp Elliott, there is an incinerator operated by the camp authorities. At Bas Obispo village, the garbage is carted away, burned and then buried. At Gorgona, much of the refuse was formerly disposed of by dumping it into the Chagres River from a platform built out into the stream. The platform was washed away during the flood of last year and refuse is now destroyed in an incinerator. At San Pablo, Frijoles and Bohio, the Chagres River acts as scavenger. Bohio, the largest of the three settlements, is provided with a chute down which the garbage is thrown. At Porto Bello, the plan was adopted of taking the garbage out to sea. It is carried to a small dock on the water front built for the purpose and there dumped into barrels for conveyance by boat to deep water.

Garbage collections from dwellings in the Zone are made each morning, but the hotels require two and three collections daily. In the larger settlements, specially built wagons, both of the wooden and iron box types, are used in this work. The main expense in connection with garbage disposal is its collection and transportation, and it has been customary to locate dumping grounds and incinerating plants as near a common center between the American and native sections of the towns, as possible, to save haulage. The refuse from the Zone slaughter houses, which are under the control of the Department of Public Works, is taken care of by its own employes.

In Colon, all garbage is careuflly examined before it is burned, and lumber, well-built barrels or casks, bottles and other articles having a commercial value are saved. The money realized from this source amounts in some months to several hundred dollars and reverts to the Department of Construction and Engineering. Three of the employes on the garbage force in Colon are paid by the Atlantic Division. In the Zone, practically the same salvage methods are employed and a large amount of copper wire screening has been realized on in this way. A lot of cast-off clothing is destroyed in the incinerators, but owing to the distance from a market and to the necessity of a thorough disinfection before shipment, there would be little or no profit in handling it. In Panama, the task of sorting over the garbage is undertaken by the local authorities, and the moneys derived therefrom revert to the municipality.

A statement of the number of garbage cans emptied daily in the different settlements during the month of July, 1910, follows:

Ancon	226	Matachin	210
Balboa	256	Gorgona	518
Corozal	151	San Pablo	199
Miraflores	96	Tabernilla	235
Pedro Miguel	307	Bohio	86
Paraiso	398	Gatun	1,338
Culebra	739	Mount Hope	112
Empire	1,571	Cristobal	479
Las Cascadas	329	Porto Bello	140
Bas Obispo	224		
		Total	7,614

During the fiscal year ending June 30, 1910, there were removed from the city of Panama 6,600 cart loads of refuse, and from Colon, Cristobal and Mount Hope, 2,434 cart loads.

Ptomaine Poisoning at Gatun.

The case of supposed ptomaine poisoning at the European laborers' mess in Gatun on the night of August 5 has been investigated by the health authorities and no light has been thrown on the probable cause of the poisoning. Seventy-four laborers were taken ill soon after the evening meal, and it was believed that they had been poisoned by some bad food. Samples of the meat, soup, and wine used at the mess were examined chemically for metallic and organic poisons with negative results. Traces were found of a substance that in its general reactions resembled a ptomaine, but when the hydrochloride of this substance was injected into a guinea pig there was no perceptible effect. A bacteriological examination was made of the drinking water used in the mess, a sample of old and new wine, and portions of the tea, meat and soup, but no microorganisms of the food-poisoning group were detected. Two patients were seen in the hospital at Gatun who were still ill, and vomitus from one and a stool from the other were examined for representatives of the food-poisoning group, but none was found.

HYDRAULIC EXCAVATION.

New Plant in the Pacific Division Nearly Ready for Service—Method of Operation.

The hydraulic and dredging machinery for excavating the lower lock at Miraflores and a section of the Canal prism in the valley of the Rio Grande below the lock, a total distance of about 9,000 feet, will be placed in operation very shortly. The work will be handled as two separate operations, the first covering the excavation in the lower lock, and the second, the removing of material from the channel section. The lock excavation will be accomplished first.

It is estimated that in the total area there are about 7,800,000 cubic yards that can be excavated by the hydraulic method. The material consists of a dark loam, containing about 15 per cent of sand and some deposits of gravel in the old bed of the Rio Grande. The general elevation of the area is eight feet above sea level, and the average depth to be excavated is 35 feet. About 1,000,000 cubic yards of the material will be required for the core of the west dam at Miraflores; the remainder will be discharged behind dikes to the east of the Canal, thereby reclaiming four hundred and fifty acres of land in the vicinity of Corozal. It is estimated that a fill of 15 feet or more will be made in this manner. The amount of rock in the section to be excavated is placed at 1,602,000 cubic yards. When the hydraulic operations are concluded, the pits that are opened up will be pumped dry and the rock taken out by steam shovels.

The old bed of the Rio Grande crosses the area of hydraulic excavation in three places. To keep the river water out, a diversion channel, with a bottom width of 60 feet and a grade of two-tenths per cent, was completed over a year ago. It parallels the Canal at a distance of about 300 feet from the mouth of Cardenas River to about opposite where the Rio Grande again enters the old French channel, near Station 2190. The diversion left the prism practically free of surface water, but during the rise of the tides, salt water from the sea backed up regularly as far as the basin at the lock site, which was formed by the removal of material by the suction dredge *Sandpiper* a year or more ago. As a preliminary step in the hydraulic work at this point, a coffer dam has been constructed below the lock site, where the spur line from the Balboa sand track to the pumping station crosses the channel, thus preventing further entrance of sea water from below it. At the north end of the basin, a section of the original earth will be allowed to remain separating the upper from the lower locks. It was found that the water left above this coffer dam was 25 feet deep in places, and to bring the level down to 10 feet, at which depth the dredging units will be able to operate to the best advantage, one of the barge pumps has been set at work unwatering the submerged area to the desired level. This is done by pumping the water through a 20-inch discharge pipe over the dike east of the prism into the Rio Grande diversion.

When the second operation, that below the lower lock, is begun, two more coffer dams will be built, one across the old Rio Grande channel just north of the pumping station, and the other across the Canal channel at the southern limit of the section to be excavated, near where the old channel of the Rio Grande crosses the prism for the third time. This will effectually shut off the entrance of water from any direction, but water will continue to back up from the Canal via. the Rio Grande channel to the coffer dam north of the pumping station, thereby furnishing a steady supply for the pumps.

The hydraulic plan involves two methods, as follows:

(*a*) The disentegrating and sluicing of the material into sumps, and

(*b*) The lifting and conveying of this disintegrated material to the place of deposit with dredging machinery mounted on concrete barges.

The central pumping station, called "Agua Dulce" from its proximity to Agua Dulce Hill, lies west of the Canal, not far from the middle of the territory to be excavated. The machinery is inclosed in a temporary superstructure, divided into an engine room 50 by 100 feet on the east side, and a boiler room 40 by 100 feet on the west side. The station floor is 12 feet above sea level. The machinery equipment consists of four 1,000-horsepower horizontal direct-connected triple expansion pumping engines, built by Henry R. Worthington, with 19, 30 and 50-inch steam, and 24½-inch water cylinders, and a 24-inch stroke. The four units are lined up parallel to each other at a distance of 25 feet from center to center. Each pump is provided with a cast-iron 36-inch suction pipe reaching, with the foot valves, into a sump near by, excavated to five feet below extreme low water. Each engine has its own surface condenser, built into the discharge pipe, and each condenser has a combination dry and wet vacuum pump. At elevation plus 20, the pumps discharge into a common delivery pipe from which they are separated by a 24-inch check valve and a 24-inch gate valve. The delivery pipe has two branches, which begin at the outside, with a diameter of 24 inches, and increase in size toward the center line of the building, where they unite in a "Y" and connect with the 40-inch discharge main. Each unit is guaranteed to supply 7,500 gallons of salt water per minute at 150 pounds pressure.

The boiler room equipment consists of four Babcock & Wilcox water tube boilers of the cross-drum, semimarine type, and each one has 4,500 square feet of heating surface. They are designed for 150 pounds pressure per square inch without superheat and are set in units of one each. The steam piping is so arranged that any pump can be operated by any boiler. On one side, the boilers have oil furnaces; on the other side, fire doors, grates and ash pits, so that coal can be used if deemed expedient. The boilers are encased in steel plates, instead of brick, protected by magnesia and tile insulation. The steel stack is 9 feet 6 inches in diameter and rises to a height of 150 feet above the boilers. The guaranteed efficiency from furnace to output of the boilers is 95 million foot-pounds per million B. t. u.[1]

Fuel oil is stored in two steel tanks situated on the side of the hill back of the station, each tank having a capacity of 2,000 barrels. They are directly connected with the Union Oil Company's main, and the oil is fed through a 4-inch pipe, reaching the burners at a 50-pound pressure.

The discharge main is 3,600 feet in length and consists of 2,000 feet of 40-inch, 800 feet of 32-inch, and 800 feet of 24-inch pipe. The first 2,800 feet are lock-bar pipe, and the remainder, spiral riveted pipe. The lock-bar pipe, the product of the East Jersey Pipe Company, was manufactured in 30-foot lengths which are joined together by ¾-inch forged steel flanges. Five air valves are mounted at equal distances apart to prevent rupture of the pipe and to allow the escape of air while the pipe is being filled. The pipe line is provided with 12 openings, in groups of three, for the branch line connections. The main extends nearly horizontally alongside the approach track to the pumping station at the foot of the Agua Dulce and Cocoli hills. To prevent any upward movement it is weighted down at regular stages by several tons of rock. Where bends in the pipe occur the latter is firmly anchored in place by cables held taut by rings set in concrete. In one place the pipe line crosses a wooden trestle to which it is fastened by iron belt rods. Corrosion is guarded against by the application of an asphalt compound.

The branch lines, or "take-offs," are made of 16-inch spiral riveted steel, the whole of this class of steel pipe used on the works, having been furnished by the Abendroth & Root Manufacturing Company of Newburgh, N. Y. Each branch line consists of a section of twin pipe 800 feet long extending to the monitors or giants, the four double lengths thus employed aggregating 6,400 feet. They are situated 800 feet apart, the first one branching off at a point 1,200 feet from the central pumping station. The arrangement is such that one of the branch lines can be made to serve, if necessary, as an addition to any one of the others, thereby extending the immediate zone of operations.

The hydraulic giants or monitors were made by the Joshua Hendy Company of San Francisco and are of the latest type used in mining operations in California and other parts of the West. Each of the eight giants weighs 1,500 pounds and consists of a base for attachment to a 16-inch gate valve at the terminus of the pipe line, a horizontal and vertical joint, and a long conical reducing piece. The frictional resistance is decreased by a ball-bearing, and a weighted lever is attached to control the direction of the jet. A deflecting nozzle is fitted to the discharge end of the giant, which permits deflections through a small angle without changing the position of the main body. The tapering piece of the giant is fitted on the inner side with two sets of guide vanes which prevent a scattering or rotary motion of the water after it has issued from the nozzle. The nozzles used will vary from four to six inches in diameter according to the character of the material in which they are working, and at full head the water coming through them will exert a pressure of 130 pounds to the square inch, the equivalent of a ton and one-half of pressure against a bank 100 feet away within range of the deflectors. As it is expected that the positions of the monitors will be shifted frequently their bases are of temporary construction. The giants will operate from eight feet above to 45 feet below mean tide, and will be made to wash down the material in sluices which will carry the water containing earth in suspension to the sump where the barge pumps are at work. When it becomes necessary to move a barge the giants will cut a new sump with a channel leading into it through which one or more units of the fleet may be floated. The banks will be excavated as nearly perpendicularly as possible, in order that trenches may be cut in them and the banks undermined so as to cause the material to fall by gravity.

The centrifugal dredging pumps correspond in total capacity to that of the steam reciprocating pumps, and are mounted on barges built of concrete, one unit or pump to each of the three barges. A description of these barges was published in THE CANAL RECORD of February 9, 1910. Each unit consists of an 18-inch single suction dredge pump direct-connected to a Westinghouse 655-horsepower induction motor. The runners for the pumps are overhung and are especially long. The manganese steel impeller on each pump has five blades and is designed to handle 10,000 gallons of salt water per minute and 300 cubic yards of solid matter per hour, or, in other words, 110 cubic feet of water to one cubic foot of sedimentary material against a varying actual head up to 60 feet while running at 480 r. p. m. Each pump, including base plate elbow and valve, weighs approximately 30,000 pounds. The suction pipe on each pump is 12 feet long and 20 inches in diameter. The motors are of the 3-phase, 25-cycle type, 2,080-volt, with automatic starting equipment. On the switchboard panels are mounted indicating and integrating wattmeters, oil-circuit breakers and the time limit switches. Power will be supplied by the Miraflores central station, and armored submarine cables connect the motors to the pole lines. For priming the pumps, a small motor-driven vacuum pump will be installed on each barge.

The crest of the dam at Miraflores will be 70 feet above sea level, making the total lift for the hydraulic fill, 110 feet. The dredging pumps will accomplish the lift to 60 feet, and to secure the additional lift of 50 feet, an 18-inch motor-driven relay pump, identical in type to the centrifugal dredging pumps, has been installed in a small pumping station on the west bank about midway between the dam and the central pumping station, and will be attached to one of the dredging units, being so arranged that the 20-inch suction pipe may be directly connected to the discharge pipe of the dredging pump. The discharge pipe to the core of the dam has been completed, with the exception of a small gap which can be closed in a few hours.

Clerk and Typewriter Examinations.

It is desired to direct attention to the fact that typewriting is no longer given as an optional subject in connection with the examination for clerk, Isthmian Canal Service. Optional subjects which may be taken in connection with that examination are stenography and typewriting, bookkeeping, railroad experience, general business experience, and timekeeping experience.

A separate examination will be held for typewriter, Isthmian Canal Service, which will comprise the following subjects, with relative weights on a scale of 100 as indicated: Copying from rough draft, 20; copying and spacing, 30; copying from plain copy, 20; penmanship, 5; report writing, 10; arithmetic (first grade), 5; general business experience, 10. The last subject will be rated on the statements made in application and testimonials, corroborated, if necessary, by persons named as references. It is expected to secure from this examination eligibles qualified in typewriting and having a general business experience. Appointments will be made to the position of clerk at $1,200 per annum.

Examinations for clerk and for typewriter, both for the Isthmian Canal Service, will be held on Sunday, September 18, as announced in last week's CANAL RECORD. Information and application blanks may be secured by addressing the undersigned.

JOHN K. BAXTER,
Secretary, Isthmian Civil Service Board.

Culebra, C. Z., August 30, 1910.

PERSONAL.

Mr. Sydney B. Williamson sailed for the States on the steamship *Colon* from Cristobal on Monday, September 5, on his annual leave of absence.

Mr. James C. Courts, clerk of the Committee on Appropriations of the House of Representatives, with Mrs. Courts and their son, is on the Isthmus supervising the work of compiling the estimates for Canal appropriations for the fiscal year 1912.

Mr. George A. Greenslade, General Superintendent of Construction of the Central Division, has resigned, effective September 24, to accept a position with the Madeira and Mamoré Railroad in Brazil. In view of the fact that within one year all the excavation in the Central Division will be confined to Culebra Cut the position he vacates will not be filled.

Mr. F. A. Gause returned from his annual leave in the States on September 5.

Red Cross Finances.

The financial statement for August of Lieut.-Col. John L. Phillips, treasurer, in account with Canal Zone Chapter, American National Red Cross, follows:

RECEIPTS.		
August 1. Balance on hand.....	$1,963.07	
August 4. Proceeds of Pedro Miguel Roundhouse Ball.....	27.50	
August 1–31. Membership dues.	7.00	
		$1,997.57
DISBURSEMENTS.		
August 4. Relief of American at Cristobal....................	$10.00	
August. 17. Relief of American negro at Colon Hospital being deported on account of pulmonary tuberculosis.........	25.00	
		$35.00
August 31, Balance on hand..............		$1,962.57

JOHN L. PHILLIPS,
Treasurer.

Approved: WM. L. SIBERT,
Chairman.

Charity Ball at Hotel Tivoli.

The Knights of Pythias on the Isthmus have been granted the use of the Hotel Tivoli on the night of December 3 for a ball in aid of the National Pythian sanitarium at East Las Vegas, New Mexico. A special train will be run to carry people from along the line of the Canal to Panama and return. It is expected that the supreme chancellor and the supreme keeper of records and seals of the Knights of Pythias will be present.

The crew of the labor train, which runs between Gatun and Culebra, have been authorized to collect five cents fare for one trip from employes riding on annual passes, official trip tickets, and permits issued by the division engineer of the Atlantic Division. No other persons are allowed to use this train.

A float for the use of canoeists has been authorized for the clubhouse at Porto Bello. As this clubhouse has no bowling alleys, the cost of the float, about $100, will be borne by the Commission.

Y. M. C. A. FIELD MEET.

Results of Labor Day Field Sports at Empire.

The Y. M. C. A. athletic meet held at Empire on Labor Day, September 5, was a success. A special train from Colon brought a large number of contestants and spectators, and in addition to these, there were people from Ancon and intermediate points. Music was furnished by the I. C. C. Band. Seventy-one different men entered the meet, totaling 171 entries. The committee of management was made up of the following men, physical directors of the Zone associations: Wm. E. Burrell, Geo. R. D. Kramer, W. H. Warr, A. O. Ludwig, J. T. Hopkins, and Wm. H. Geer.

Following is the order of events, with the names of the men making places and record made:

100-yard dash—1st, J. K. Munroe, Ancon; 2nd. J. W. Tannehill, Ancon; 3rd, Geo. Lyons, Empire. Time, 11 seconds.

Shot put(12 lb.)—1st, C. H. Herring, Gorgona; 2nd, J. H. Weller, Cristobal; 3rd, J. W. Tannehill, Ancon. Distance, 45 feet 2 inches.

220-yard dash—1st, J. K. Munroe, Ancon; 2nd, G. B. Fitts, Cristobal; 3rd, Wm. Kenealy, Ancon. Time, 24 4-5 seconds.

Hammer throw (12 lb. hammer)— 1st, J. H. Weller, Cristobal; 2nd, H. Cooling, Porto Bello; 3rd, H. Bartholomew, Empire. Distance, 129 feet 7 inches.

120-yard hurdle—1st, J. W. Tannehill, Ancon; 2nd, E. Koperski, Culebra; 3rd, C. C. Bailey, Gatun. Time, 18 seconds.

High jump—1st, R. Koperski, Culebra; 2nd, A. Sherrard, Gatun; 3rd, J. W. Tannehill, Ancon. Height, 5 feet 2 inches.

Running broad jump—1st, C. H. Herring, Gorgona; 2nd, H. LaCroix, Cristobal; 3rd, D. E. Mullane, Empire. Distance, 19 feet 4 inches.

440-yard run—1st, J. W. Tannehill, Ancon; 2nd, J. H. Weller, Cristobal; 3rd, Geo. Lyon, Empire. Time, 58 4-5 seconds.

Pole vault—1st, J. T. Luttrell, Empire; 2nd, J. G. DeCora, Cristobal; 3rd, H. Cooling, Porto Bello. Height, 9 feet.

Mile run—1st, A. A. Simka, Cristobal; 2nd, C. E. Mengel, Culebra; 3rd, R. Koperski, Culebra. Time, 5 minutes 35 3-5 seconds.

Two mile walk—1st, J. J. Cavanaugh, Porto Bello; 2nd, J. P. L. Taylor, Empire; 3rd, S. C. Russell, Ancon. Time, 19 minutes 23 seconds.

Relay race, 4 laps, 4 men, one lap one-sixth of a mile—Won by team from Ancon Athletic Club, which was run under protest, Cristobal winning second place. A decision as to the winner of this event will be rendered at a later date by the Rules Committee of the New York A. A. U. The points which this event represents are not included in the following standing of teams:

	Points.
Ancon A. C.....................	29
Cristobal Y. M. C. A.............	26
Empire Y. M. C. A................	12
Gorgona Y. M. C. A...............	10
Porto Bello Y. M. C. A...........	9
Culebra Y. M. C. A...............	9
Gatun Y. M. C. A.................	4

A chemical solution, similar to a "weed-killer" used successfully on the Northern Railway of Costa Rica, will be tested by the Panama railroad, as a means of killing weeds on its right-of-way.

EXECUTIVE ORDER.

Conveyance of Real Estate by Married Women.

By virtue of the authority vested in me I hereby establish the following Order for the Canal Zone:

Article 1. Any deed or other instrument in writing relative to or affecting real estate the separate property of a married woman, or any mortgage or other lien on such property, shall be sufficient if the husband of the married woman joins with her in the execution of the instrument and the same is acknowledged by them before an officer authorized to take acknowledgments hereunder, in conformity with the provisions hereof.

Article 2. Any deed or other instrument in writing heretofore executed by a married woman joined by her husband and otherwise in conformity to law, conveying lands or interests therein belonging to her separate estate, or creating a mortgage or other lien thereon, shall be held to be valid and effective to pass such title to or interest in such land, or to create such mortgage or other lien thereon, from the date of the execution of the deed or other instrument, although no order may have been obtained as required by the Civil Code from a court or judge to authorize such conveyance, mortgage or other lien.

Article 3. In order to acknowledge the execution of an instrument in writing under the provisions hereof the parties shall appear in person before the officer authorized to take the same and acknowledge to him that they have executed the same for the purposes and considerations expressed in the instrument. If the parties making the acknowledgment or either of them is not personally known to the officer taking the acknowledgment, their identity must be established on the oath of a credible witness; and, in addition, the married woman making the acknowledgment must be examined privily and apart from her husband by the officer taking her acknowldgment, and the contents of the instrument in writing must be fully explained to her by him, and he shall not accept her acknowledgment unless she declares to him that she has willingly signed the instrument, without fear or compulsion on the part of her husband, and that she does not wish to retract it.

The certificate of acknowledgment of the husband shall be sufficient if it is substantially in the following form:

The.................Judicial Circuit, }
Canal Zone. }

Before me, ..., in and for ...., in the Canal Zone, on this day personally appeared ...., known to me (or proven to me on the oath of........................, a credible witness) to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same, for the purposes and consideration therein expressed.

Given under my hand and seal of office this ...... day of .... A. D. ......

....

....

The certificate of acknowledgment of a married woman shall be sufficient if it is substantially in the following form:

The .... Judicial Circuit, }
Canal Zone. }

Before me, ..., in and for ...., in the Canal Zone, on this day personally appeared ...., known to me (or proven to me on the oath of ...., a credible witness) to be the person whose name is subscribed to the foregoing instrument, and the said ...., being examined by me privily and apart from her husband ...., and having had said instrument fully explained to her by me, acknowledged the same to be her act and deed, and declared that she had willingly signed the same for the purposes and consideration therein expressed, without fear or compulsion on the part of her husband, the said ...., and that she did not wish to retract it.

Given under my hand and seal of office this .... day of .... A. D. ....

....

....

Article 4. Any instrument in writing required to be acknowledged by the provisions of this Order, or by any other law or order of the Canal Zone, shall be acknowledged before a judge of any court of the Canal Zone, the clerk thereof, or before any notary public of said Canal Zone, and may also be acknowledged before the judge of any court of record or the clerk thereof or before any notary public within any state, territory, district or possession of the United States.

If the instrument is one executed in a foreign country the same may be acknowledged before any diplomatic or consular officer or commercial agent of the United States, accredited to such country.

The officers authorized to take acknowledgments hereunder are also empowered to issue proper certificates of the same.

Article 5. Articles 189 and 1810 of the Civil Code, and all laws, orders, and decrees and parts thereof, in conflict with this Order are hereby repealed; provided, however, that this Order shall not affect any deed or other instrument executed pursuant to the laws in force prior to the date upon which this Order shall take effect.

Wm. H. Taft.

The White House,
August 20, 1910.
[No. 1239.]

Printing Plant Monotype.

A monotype equipment, consisting of a casting machine, No. 2751, and a keyboard, No. 3808, manufactured by the Lanston Monotype Machine Company of Philadelphia, has been installed in the Commission printing plant at Mount Hope. It does the work of several compositors and will compose type from 5 to 12-point any width up to 60 picas, and will cast type from 5 to 36-point. The Commission equipment contains two 8-point molds, one each, 6, 10 and 12-point molds, with the same number of matrix cases containing matrices for 225 different characters, two adjustable molds to cast from 14 to 36-point type, inclusive, and a number of sort matrices.

The keyboard which is independent of the casting machine, has 276 keys, so arranged that they will punch holes, at the touch of the operator, in a paper roll, each hole representing a letter, figure or other character in the type it is desired to use. When a job has been completed, the paper roll is removed and put on the casting machine. As the roll revolves in its new position, the characters thereon are cast into type from molten metal, by means of an intricate but nicely adjusted automatically operated mechanism. Each type is cast separately and carried automatically into a line, thence to its proper position on a "galley." Extra fonts of type, or "sorts" of the styles adapted to the machine can be manufactured at any time. The Canal Record and most of the job work in the Commission printing plant are set on this machine.

Balboa Sand Shipments.

A total of 32,506 cubic yards of sand was was shipped from Balboa during the month of August, which is a little less than the total for July. Most of the sand was delivered to the storage trestles at Pedro Miguel and Miraflores Locks, only a small amount going to Gatun. The distribution in detail follows:

Destination.	Number of Cars.	Cubic Yards.
Pacific Division	2,565	30,829
Atlantic Division	42	800
Central Division	26	312
Department of Sanitation	1	25
Quartermaster's Department	1	6
Panama railroad	2	50
Balboa shipways	5	59
Miscellaneous	18	425
Total	2,660	32,506

Fatal Accident at Porto Bello Quarry.

Joseph Hobart, alias Joseph Rodgers, alias John J. Moran, an American employed at the Porto Bello quarry, was struck by a 500-pound boulder as it rolled from the top of a loaded car about 7.30 o'clock on Wednesday morning, August 31, causing injuries from which he died while enroute to Colon Hospital on the tug *Empire*. He was 42 years of age, unmarried, and came to the Isthmus in 1905. He had served in the United States Army, and entered the service of the Isthmian Canal Commission under the name of Joseph Rodgers, although information received from his cousin, Anna Clark of Scranton, Pa., gives his right name as John J. Moran. At Porto Bello, he went by the name of Joseph Hobart.

A launch of the Atlantic Division fleet has been placed at the disposal of the police for patrolling Gatun Lake with special reference to warning people on the lower levels of the watershed of the approach of floods, and for rescue work, should occasion arise.

Resolutions of sympathy for Henry Jackson, on the death of his son John Jackson, were passed by Empire Court of the Independent Order of Panamanian Kangaroos at a meeting held on August 27.

The steamship *Massachusetts* has been chartered to carry two loads of cement to the Isthmus during September and October.

Tide Table.

The following table shows the time of low and high tides at Panama for the week ending September 14, 1910 (75th meridian time):

Date.	Low.	High.	Low.	High.
	A. M.	A. M.	P. M.	P. M.
September 8	12.29	6.33	12.52	6.51
September 9	1.01	7.03	1.29	7.23
September 10	1.40	7.36	2.10	7.57
September 11	2.18	8.10	2.50	8.38
September 12	3.02	8.52	3.42	9.32
September 13	4.02	9.52	4.47	10.45
September 14	5.18	11.10	5.57	......

Launch Service to Taboga.

The steamer *Sanidad* leaves the dredge landing at Balboa at 9 o'clock Tuesday, Thursday and Saturday mornings. On the return trip it arrives at Balboa about 4.30 p. m. in time to make connections for the 5.30 train at Panama.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

The local bowling tournaments have closed and the following are the final standings:

Teams.	Won.	Lost.	Per cent
TENPINS.			
Lock and Dam	6	3	666
Quartermaster's	4	4	500
Chairman's Office	3	4	428
Miscellaneous	3	5	375
DUCKPINS.			
Miscellaneous	7	2	777
Lock and Dam	3	3	500
Quartermaster's	2	4	333
Chairman's Office	3	6	333

Culebra took three games from the Empire bowling team on September 2, 1910, by the following scores:

Empire.				Culebra.			
Gustavson	151	152	169	Hall	150	168	163
Shaughnessy	162	202	166	Herrington	211	145	189
Giavelli	152	194	118	Case	124	148	153
Reed	142	113	174	Cohen	165	169	160
Nicodemus	141	148	146	Dougherty	121	199	171
Total	748	809	773	Total	771	829	836

The entertainment given by Miss Gay Zenola MacLaren on Thursday night, September 1, was enjoyed by a large audience and was one of the best entertainments ever given here. Miss MacLaren will give a return engagement reciting "The Man from Home," on Tuesday evening, September 20. On Sunday evening, September 11, she will recite "The Sign of the Cross." There will be no charge for this recital and everyone is cordially invited to attend.

The meeting of the discussion club on Wednesday evening, August 31, was led by J. D. Safford of Camp Elliott, the subject being "Leadership."

The bowling averages for July for ten games or more are as follows:

	No. of Games.	Average.
Cohen	11	164
Coppin	10	156½
Cornthwaite	12	144½
Fleischman	15	139
Fox	35	140½
Hall	24	152⅔
Herrington	29	148
Hostetter	16	142½
Mengel	22	140½

High score for the month was made by Cushing with 212. The men rolling 200 or over for the week ending September 3, are: Hall, 216; and Herrington, 211.

EMPIRE.

The literary and debating society will hold a "County Convention" at its next meeting.

The leader of the discussion club meeting held on Wednesday night, September 7, was Geo. R. D. Kramer of Culebra. The subject was "Exercise."

A large audience attended Miss MacLaren's recital of "The Music Master" on September 2. She will give "The Man from Home" as a return engagement at the clubhouse on Friday night, September 16.

The final scores for the "Rag Time" tournament were as follows: Potter-Huson, 1,215; Huson-Gorham, 1,096; Edwards-Potter, 1,092; the teams mentioned winning first, second and third prizes, respectively.

The "Boys' Gymnasium Club" for boys from 10 to 15 years of age, held a track meet on Saturday, September 3, with the following results:

Running high jump—1st, Leon Hartman, 3 feet 10 inches; 2nd, Samuel West, 3 feet 9 inches; 3rd, Perry Payne, 3 feet 4 inches.

100-yard dash—1st, William Skinner, 2nd, Samuel West, 3rd, Wallace Catto. Time, 13 seconds.

220-yard dash—1st, Wm. Skinner, 2nd, John King, 3rd, Babe Payne. Time, 32 seconds.

Running broad jump—1st, Clifford Hartman, 14 feet; 2nd, Wm. Skinner, 13 feet 4 inches; 3rd, Geo. Cochez, 12 feet 2 inches.

12-lb. shot—1st, C. Hartman, 26 feet; 2nd, John King, 25 feet 8 inches; 3rd, Wm. Skinner, 23 feet 8 inches.

One mile run—1st, Joe Fein, 6 minutes 30 seconds; 2nd, Wm. Skinner, 6 minutes 45 seconds; 3rd, Wallace Catto, 7 minutes.

GORGONA.

The pennant which was the prize for the high bowling score in August was won by Fred King with 230. Other 200 scores were made as follows: Stoehr, 211; Wright, 201; King, 211; 230, 200, 201, 211, 204, 230, 205; White, 203, 201; Stewart, 200; R. Varenkamp, 203; Roper, 213; Otis, 218, and Hopkins, 206.

The second meeting of the discussion club was held on Tuesday evening, August 30, with F. C. Freeman as leader. The subject was "Our Thoughts." These meetings will be held every Tuesday night at 7.15 o'clock for the next eight weeks. They are held informally in the game room. Every one is urged to come and participate in the discussions.

The second series of moving pictures from the States was exhibited to a large audience on Thursday night, September 1. There will be two moving picture entertainments during the month of September at dates to be announced later.

Miss Gay Zenola MacLaren will give an imitative recital of "The Music Master" on Thursday night, September 8, at the clubhouse.

The Isthmian bowling tournament opens on Saturday night, September 10, with Culebra second team playing at Gorgona and the Gorgona first team playing at Culebra. Admission free for the game.

GATUN.

The next meeting of the discussion club will be held on Friday night, September 9, the subject being "Our Thoughts."

The recital of "The Music Master" by Miss Gay Zenola MacLaren on Wednesday evening, August 31, was well attended. A return engagement has been arranged for Thursday evening, September 15, when she will give "The Man from Home."

On Saturday evening, September 10, the Empire and Gatun basketball teams will meet on the Gatun floor.

The interassociation bowling league games start on Saturday night, September 10, when Cristobal's first team will play Gatun's first team at Gatun, and the Gatun second team will play the Cristobal second team at Cristobal.

The match game rolled on Monday evening, August 29, between the "Myrtars" and the "Y. M. C. A. Pickers," resulted in the Pickers winning three games, the following being the scores:

Pickers.				Myrtars.			
DeMoll	168	150	138	Soule	159	131	122
Hodges	159	146	163	Kiernan	139	135	157
C.R.H'r'g'n.	132	181	163	Meyer	152	121	119
Warr	176	125	158	Myers	195	108	136
C.A.H'r'g'n.	190	151	155	Durand	155	164	183
Total	825	753	777	Total	800	659	717

On Thursday evening, September 8, the first team will play the second team.

The prizes given for the high score in duck and tenpins for the month of August were won by W. L. Dalton in duckpins with 123, and H. Hodge in tenpins with 225.

CRISTOBAL.

Miss Gay Zenola MacLaren read "The Music Master" before a large and enthusiastic audience, Tuesday night, August 30. Friday night, September 9, Miss MacLaren will read "The Man from Home" and on Wednesday, Sept 21, she will give "The Man of the Hour."

The local membership campaign is going on and indications point to a very large increase in membership. The three teams captained by Chambers, Farrell and Goddard, respectively, are hard at work.

The discussion club this week had for its topic "What is Failure?" Next week, J. D. Safford from Camp Elliott will lead. Subject, "Leadership."

The second of the series of moving picture entertainments was held Friday night, September 2, before a large audience.

Local bowling teams, first and second, rolled a match last week with the following result:

First Team.				Second Team.			
Louch	164	167	169	Barrett	148	156	170
Adams, D.	168	177	161	Adams, H.	131	152	180
Collins	158	123	141	Schofield	150	139	186
Rabbitt	164	137	193	Blackburn	212	208	164
Bullard	176	169	138	Burns	145	131	155
Totals	830	773	802	Totals	786	786	855

Grover won the pennant prize for the month of August with the high score of 213. Rabbitt won the high average.

The "Employed Boys" played the Y. M. C. A. gymnasium at basketball, Wednesday night.

C. A. Bullard has been elected captain of the first Y. M. C. A. bowling team and Dr. W. A. Blackburn, captain of the second team.

J. W. Debrill, office assistant at the clubhouse, has been ill at Colon Hospital for the past two weeks. C. E. Yeiser has been taking his place.

The office men's gymnasium class is becoming very popular and many are availing themselves of the chance to get into it.

Married.

ROSE-BROWNING—At 7.30 p. m., September 3, at the home of the bride's parents in Empire, the Rev. A. A. Nellis officiating, Eunice Ripley Browning to Paul C. Rose of Detroit, Mich. Residence, house No. 67, Empire, C. Z.

The following vessels arrived at and departed from the port of Balboa during the week ending September 3:

Arrivals—August 28, *Quito*, from intermediate ports; August 31, *San Juan*, from San Francisco, *Ecuador*, from Guayaquil; September 1, *Huasco*, from south ports.

Departures—August 27, *Ucayali*, to south ports; August 28, *Peru*, to south ports; August 30, *Cuzco*, to Valparaiso; August 31, *Acapulco*, to San Francisco, *Chiriqui*, to Buenaventura and Tumaco; September 2, *Quito*, to intermediate ports.

Rainfall from July 31 to August 31, Inclusive.

MIDNIGHT TO MIDNIGHT.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Chorrera	2.10	24	8.14
Ancon	4.12	24	12.00
Balboa	3.65	24	10.85
Miraflores	2.45	20	11.97
Pedro Miguel	2.48	7	10.08
Rio Grande	2.11	7	8.98
Central Section—			
Culebra	2.30	27	10.11
Camacho	1.90	27	10.75
Empire	2.21	27	10.08
Gamboa	1.41	31	10.66
Alhajuela	1.92	23	13.43
El Vigia	3.22	23	15.01
Gorgona	2.10	31	10.84
San Pablo	3.87	12	13.06
Tabernilla	3.43	12	11.07
Bohio	3.32	24	14.84
Trinidad	5.00	24	12.03
Monte Lirio	2.23	1	13.68
Atlantic Section—			
Gatun	3.65	20	13.85
Brazos Brook	2.95	12	13.56
Cristobal	3.33	12	14.93
Porto Bello	4.32	10	20.71
Nombre de Dios	1.76	10	9.63

August Rainfall for Three Years.

STATION.	1908	1909	1910	Station Average	Years of Record	Rai'y days 1910
Pacific Section–	*Ins.*	*Ins.*	*Ins.*	*Ins.*		
Ancon	11.48	6.84	12.00	7.64	14	18
Balboa	10.48	6.86	10.85	7.54	12	19
Miraflores	......	6.46	11.97	9.22	2	22
Pedro Miguel	9.31	10.07	10.08	9.82	3	23
Rio Grande	7.65	9.12	8.98	10.22	6	24
Central Section–						
Culebra	7.74	8.32	10.11	10.57	19	23
Camacho	8.28	8.03	10.75	10.25	5	24
Empire	8.11	7.20	10.08	10.14	7	23
Gamboa	11.84	7.03	10.66	12.20	28	29
Alhajuela	16.64	8.15	13.43	13.29	12	26
El Vigia	......	11.24	15.01	13.12	2	27
Gorgona	......	8.45	10.84	12.37	7	23
San Pablo	10.70	9.04	13.06	10.94	4	24
Tabernilla	11.02	9.78	11.07	10.80	4	28
Bohio	20.50	10.01	14.84	15.34	16	30
Trinidad	19.00	9.50	12.03	13.51	3	26
Monte Lirio	15.88	8.39	13.68	12.65	3	31
Atlantic Section–						
Gatun	16.22	9.92	13.85	16.10	5	28
Brazos Brook	18.19	10.67	13.56	15.24	5	26
Cristobal	16.89	15.42	14.93	15.22	40	25
Porto Bello	16.98	13.83	20.71	17.17	3	22
Nombre de D	......	12.15	9.63	10.89	2	26

Band Concert.

The Isthmian Canal Commission Band will give a concert at Hotel Tivoli, Ancon, C. Z., on Sunday, September 11, 1910, at 7.30 p. m. The program follows:

1 March—*Bay State Commandery*..........Burrell
2 Selection—*The Dollar Princess*..............Fall
3 Barn Dance—*By the Light of the Silvery Moon*..............Edwards
4 Overture—*Poet and Peasant* (By request)..Suppe
5 Sextet from Lucia..................Donizetti
6 Medley Selection—*Mills'* 1910..........Schulz

Introducing "Lily of the Prairie," "I'd Like to Be the Fellow That Girl Is Waiting For," "Highland Mary," "Everybody's Happy When the Moon Shines," "You For Me When Your'e Sweet Sixteen," "Comical Eyes," "Sicilian Chimes," "My Friend Jim-a-da-Jeff," and "Margarita."

7 Waltz—*Love Sparks*..................Holzman
8 Medley March—*Put On Your Old Gray Bonnet*..............Wenrich
9 Patrol—*American*..................Meacham
10 March—*National Emblem*..............Bagley

Chas. E. Jennings, *Musical Director.*

The next concert will be given at Gorgona, September 18, at 6 p. m.

OFFICIAL CIRCULARS.

Occupation of Family Quarters.

CULEBRA, C. Z., August 29, 1910.

CIRCULAR No. 346:

The following resolution, adopted by the Commission at its one hundred and fifty-eighth meeting, held August 25, 1910, is published for the information and guidance of all concerned:

WHEREAS, It is at times necessary for employes, in order to hasten recovery from injury or disease contracted in line of duty on the Isthmus, to temporarily return to the United States; and

WHEREAS, By reason of such absence they are required to surrender family quarters;

Resolved, That the applications of such employes may be placed at the head of the list for assignment to the first quarters vacated after their return to duty, provided their sojourn in the United States was upon the recommendation of the Medical Examining Board.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

CULEBRA, C. Z., August 30, 1910.

CIRCULAR No. 347:

The following resolution, adopted by the Commission at its one hundred and fifty-eighth meeting, held August 25, 1910, is published for the information and guidance of all concerned:

Attention was called to the fact that family quarters in some instances have been held unoccupied longer than fifty-six days by being reassigned to the same employe upon a new application, thus depriving the Commission of the quarters for assignment to other employes. This practice being deemed an evasion of the regulations governing the assignment of family quarters, upon motion it was

Resolved, That no new assignment of family quarters shall be made to an employe within fifteen days after the quarters previously assigned are forfeited or released.

GEO. W. GOETHALS.
Chairman and Chief Engineer.

Service on Coroner's Jury.

CULEBRA C. Z., September 1, 1910.

CIRCULAR No. 276-B:

Employes of the Isthmian Canal Commission or of the Panama Railroad Company who are duly summoned to testify before a coroner's jury in the Canal Zone will be compensated for time lost in the same manner as employes selected for jury duty or summoned as witnesses in criminal cases. Certificates showing the time the employe is actually in attendance will be issued by the coroner or his deputy. In other respects the same procedure will be followed as is prescribed in Circular No. 276.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Closing of Cocoli Shop.

CULEBRA, C. Z., August 31, 1910.

CIRCULAR No. 349:

1. Effective September 1, 1910, the Cocoli shop of the Pacific Division will be closed and all mechanical work now being done there will be transferred to the Pedro Miguel shop of the Mechanical Division.

2. On and after September 1, 1910, the Mechanical Division will hostle all locomotives and will perform all mechanical work at Pedro Miguel shop, and make all repairs to the stationary plants at Pedro Miguel, Miraflores, and other places in the Pacific Division, both day and night, as may be called for by the Division Engineer of the Pacific Division or such of his assistants as may be authorized to direct the performance of such work.

3. The Division Engineer of the Pacific Division, and his authorized representatives, may call direct upon the foreman of the Pedro Miguel shop for mechanical work, which will be promptly preformed in the manner indicated, provided that the manufacture of new material and the making of alterations will be done as provided for in Circular No. 343.

4. The Pacific Division repair shop for narrow gage locomotives near the Pedro Miguel Locks is to remain under the jurisdiction of the Pacific Division. However, the Division Engineer of the Pacific Division is authorized to require the services therein of mechanics from the Pedro Miguel shop when so desired.

5. The Cocoli shop will remain intact until further orders, all machines and tools therein to be protected against deterioration and injury by the Pacific Division.

6. The Division Engineer of the Pacific Division will furnish the Superintendent of the Mechanical Division and the foreman of the Pedro Miguel shop direct with the names and positions of, or otherwise designate, the representatives of the Pacific Division whom he authorizes to call upon the Pedro Miguel shop for mechanical work.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal and Colon during the week ending September 3, 1910:

Oruba, August 28, from New York, with 300 bales iron bolts for Atlantic Division; 8 cases paper, 175 cases tie plugs for stock.

Colon, August 29, from New York, with 6,300 barrels cement, 26 crates boiler tubes for Atlantic Division; 10 packages crane machinery for Pacific Division; 27 bundles castings, 913 pieces castings for Mechanical Division; 6 cases electrical equipment for Fire Department; 35 cases ink and mucilage, 14 bundles steel, 188 kegs nuts, 12 cases asbestos material, 55 cases steel shafting, 150 cases varnish for stock; and a miscellaneous cargo, the whole consisting of 7,852 packages, weighing 1,404 tons.

Sibiria, August 29, from New York, with 260 pieces steel bars, 212 cases electric fuses for stock.

Otta, August 30, from Baltimore, with 578 tons lock construction material for Atlantic and Pacific Divisions; 2 Porter locomotives, 50,028 feet B. M. spruce lumber for Atlantic Division; 4,400 corrugated steel bars for Pacific Division; 1,000 car wheels for Mechanical Division; 826 tons steel plates, bars, etc., 20,224 cases dynamite, 145 tons foundry coke, 2,500 kegs railroad spikes, 4,051 bundles splice bars, 70 cases steel shafting, 1,109 pieces wrought steel galvanized pipe for stock.

Cristobal, August 30, from New York, with 31,670 barrels cement for Atlantic Division; 83,320 bags cement for Pacific Division.

Abangarez, September 1, from New Orleans, with 324 tons dump car parts for Cristobal shops (for erection); 164 barrels paving brick for Civil Administration; 4,108 pieces yellow pine car stakes, 80,708 feet B. M. yellow pine lumber, 630 sacks cottonseed meal and hulls, 40 bundles turnbuckles, 2,436 bales hay for stock.

Almirante, September 2, from New York, with 126 bundles wheelbarrow parts, 22 barrels drift bolts, 22 half-barrels drift bolts, 58 bundles scythe handles, 18 bundles scythe snaths, 60 bundles rail braces for stock.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, September 3, 1910. All heights are in feet above mean sea level.

DAY AND DATE	STATION.				
	Vigia	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun. August 28	127.8	94.5	48.8	19.3	18.9
Mon. August 29	127.7	94.3	48.8	18.7	18.4
Tues. August 30	127.4	94.2	48.0	18.1	17.8
Wed. August 31	130.6	96.2	49.6	17.7	17.3
Thurs. Sept. 1	138.3	101.1	55.4	18.5	17.0
Friday Sept. 2	131.5	98.0	55.5	20.1	17.7
Sat. Sept. 3	130.3	96.0	49.9	17.8	17.5
Height of low water	125.0	92.0	46.0		

Cold Storage Prices.

There are no changes in the prices of cold storage articles from those quoted in last week's isssue of THE CANAL RECORD.

WEATHER CONDITIONS, CANAL ZONE, AUGUST, 1910.

STATIONS.	Press're (reduc'd to mean of 24 hours.)	Temperature.					Mean relative humidity.	Precipitation.			Wind				
		Mean.	Maximum.	Date.	Minimum.	Date.		Total inches.	Station average.	Number of rainy days.	Total movement (in miles.)	Prevailing direction.	Max. velocity (in miles.)	Direction.	Date.
Cristobal	29.856	78.4	86	31	72	20	90	14.93	15.22	25	5,342	N.W.	25	W.	19
Culebra	29.834	78.8	89	7	69	6	94	10.11	10.57	23	4,152	N.W.	30	N.	8
Ancon	29.842	79.2	91	15	69	21	92	12.00	7.64	18	4,541	N.W.	31	N.E.	19

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company, of the Royal Mail Steam Packet Company, of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Panama	P. R. R.	Saturday	Sept. 3
Allianca	P. R. R.	Saturday	Sept. 10
Colon	P. R. R.	Saturday	Sept. 17
Advance	P. R. R.	Friday	Sept. 23
Panama	P. R. R.	Thursday	Sept. 29
Allianca	P. R. R.	Wednesday	Oct. 5
Colon	P. R. R.	Tuesday	Oct. 11
Advance	P. R. R.	Monday	Oct. 17
Panama	P. R. R.	Saturday	Oct. 22
Allianca	P. R. R.	Friday	Oct. 28
Colon	P. R. R.	Friday	Nov. 4

CRISTOBAL TO NEW YORK.

Cristobal	P. R. R.	Thursday	Sept. 8
Advance	P. R. R.	Saturday	Sept. 10
Panama	P. R. R.	Friday	Sept. 16
Allianca	P. R. R.	Thursday	Sept. 22
Colon	P. R. R.	Thursday	Sept. 29
Advance	P. R. R.	Wednesday	Oct. 5
Panama	P. R. R.	Tuesday	Oct. 11
Allianca	P. R. R.	Monday	Oct. 17
Colon	P. R. R.	Sunday	Oct. 23
Advance	P. R. R.	Saturday	Oct. 29
Panama	P. R. R.	Friday	Nov. 4

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 4th and 25th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Santa Marta	U. F. C.	Thursday	Sept. 1
Magdalena	R.-M.	Saturday	Sept. 3
Metapan	U. F. C.	Thursday	Sept. 8
Prinz Joachim	H.-A.	Saturday	Sept. 10
Zacapa	U. F. C.	Thursday	Sept. 15
Clyde	R.-M.	Saturday	Sept. 17
Almirante	U. F. C.	Thursday	Sept. 22
Prinz Aug. Wilhelm	H.-A.	Saturday	Sept. 24
Santa Marta	U. F. C.	Thursday	Sept. 29
Atrato	R.-M.	Saturday	Oct. 1
Metapan	U. F. C.	Thursday	Oct. 6
Prinz Joachim	H.-A.	Saturday	Oct. 8
Zacapa	U. F. C.	Thursday	Oct. 13
Tagus	R.-M.	Saturday	Oct. 15

COLON TO NEW YORK.

Clyde	R.-M.	Wednesday	Sept. 7
Almirante	U. F. C.	Friday	Sept. 9
Prinz Aug. Wilhelm	H.-A.	Tuesday	Sept. 13
Santa Marta	U. F. C.	Friday	Sept. 16
Atrato	R.-M.	Wednesday	Sept. 21
Metapan	U. F. C.	Friday	Sept. 23
Prinz Joachim	H.-A.	Tuesday	Sept. 27
Zacapa	U. F. C.	Friday	Sept. 30
Tagus	R.-M.	Wednesday	Oct. 5
Almirante	U. F. C.	Friday	Oct. 7
Prinz Aug. Wilhelm	H.-A.	Tuesday	Oct. 11

NEW ORLEANS TO COLON.

Atenas	U. F. C.	Saturday	Sept. 3
Turrialba	U. F. C.	Saturday	Sept. 10
Abangarez	U. F. C.	Saturday	Sept. 17
Atenas	U. F. C.	Saturday	Sept. 24
Turrialba	U. F. C.	Saturday	Oct. 1
Abangarez	U. F. C.	Saturday	Oct. 8

COLON TO NEW ORLEANS.

Atenas	U. F. C.	Thursday	Sept. 15
Turrialba	U. F. C.	Thursday	Sept. 22
Abangarez	U. F. C.	Thursday	Sept. 29
Atenas	U. F. C.	Thursday	Oct. 6
Abangarez	U. F. C.	Thursday	Oct. 13

COLON TO BARBADOS, CALLING AT TRINIDAD.

Magdalena	R.-M.	Tuesday	Sept. 13
Clyde	R.-M.	Tuesday	Sept. 27

The next sailing of the Leyland Line will be as follows: *Memphian*, on or about September 11 for Brunswick, Ga., via Kingston, Ja.

Hamburg-American steamers leave for New York at 10 a. m., and for Port Limon every Tuesday or Wednesday.

Royal Mail steamers leave for New York on alternate Wednesdays at 10 a. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans leave on Thursday at 3 p. m., and for New York on Friday at 10 a. m.

Sailings of the French Line (Cie Generale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3d and 20th of each month.

CANAL RECORD

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Isthmus of Panama.

No communication either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Side Walls of Second Pair of Locks at Gatun Begun.

The building of the side walls of the second pair of locks at Gatun was begun on September 9, when one cableway, which had been moved into position over the second chamber, began delivering concrete into one of the movable steel wall forms, which had been lowered from the upper locks. Work in the upper locks is now confined almost entirely to placing concrete in complicated forms around steel work for the upper and intermediate gates.

Backfilling behind the outer walls of the first or upper locks is being pushed, in order that all the work may be completed by January 1, 1911, to the point where the gate contractors can begin their work without interference from lock construction.

Concrete work for week ending September 10:

Date.	Cubic Yards.			
	Construction plant.	Auxiliary plant.	Large stone.	Total.
September 5...	Holiday	....	....	....
September 6...	1,966	990	318	3,274
September 7...	1,914	850	282½	3,046½
September 8...	2,022	1,020	296	3,338
September 9...	1,500	982	300½	2,782½
September 10..	1,912	910	305½	3,127½
Total.......	9,314	4,752	1,502½	15,568½
Previously reported...	....	....	....	693,098
Grand total..	....	....	....	708,666½

Canal Work in August.

The grand total of Canal excavation in August was 2,813,462 cubic yards, of which 2,757,990 cubic yards were charged to "work excavation" and 55,472 cubic yards to "plant." The dry excavation amounted to 1,775,072 cubic yards and was principally by steam shovels. The dredges removed 1,038,390 cubic yards in addition to the amount pumped into Gatun Dam by suction dredges. The progress on the locks at Gatun and Pedro Miguel is referred to elsewhere in this issue.

In the Atlantic Division, the total excavation was 645,760 cubic yards. Of this total, 132,339 cubic yards were dry excavation and the remainder was removed by the dredges in the Atlantic entrance.

The total excavation in the Central Division was 1,612,396 cubic yards, all but 278 cubic yards of which was chargeable to work excavation. All records for excavation in a rainy season month, both in this division and Culebra Cut, were surpassed in August.

In the Pacific Division the total excavation was 555,306 cubic yards, all but 30,337 cubic yards of which was taken out by dredges at the Pacific entrance.

A detailed statement of the excavation and a summary of the work on the locks and dams follow:

Locality.	"Work." Excavation.	"Plant." Excavation.	Total excavation
ATLANTIC DIVISION.			
Dry excavation—	Cu. Yds.	Cu. Yds.	Cu. Yds.
Locks, Dam and Spillway..................	99,737	32,602	132,339
Mindi................	....	....	....
Total................	99,737	32,602	132,339
Wet excavation—			
Atlantic entrance	508,829	4,592	513,421
Locks, Dam and Spillway.................	....	....	....
Total................	508,829	4,592	513,421
Total wet and dry excavation.........	608,566	37,194	645,760
CENTRAL DIVISION.			
All dry excavation—			
Culebra Cut............	1,373,334	278	1,373,612
Chagres section........	234,404	....	234,404
Obispo Diversion......	4,380	....	4,380
Total	1,612,118	278	1,612,396
PACIFIC DIVISION.			
Dry excavation—			
Locks, Dams and Spillways.............	30,337	....	30,337
Diversions............	....	....	....
Prism, south of Pedro Miguel Locks........	....	....	....
Total................	30,337	....	30,337
Wet excavation—			
Pacific entrance	506,969	18,000	524,969
Miraflores Locks......	....	....	....
Diversions............	....	....	....
Total................	506,969	18,000	524,969
Total wet and dry excavation.........	537,306	18,000	555,306
TOTAL CANAL EXCAVATION.			
Dry excavation	1,742,192	32,880	1,775,072
Wet excavation	1,015,798	22,592	1,038,390
Total....	2,757,990	55,472	2,813,462

Mean rainfall along Canal (eleven stations) 11.61 inches.

By "Work" Excavation is meant excavation actually made for one of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc.; that is, it represents material taken from the area to be occupied by the Canal, and constitutes excavation useful for the completed Canal.

By "Plant" Excavation is meant excavation outside of any of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc. It includes material necessary to be excavated for construction purposes only and is chargeable against the particular plant item for which it is performed, such as Prism, Diversions, Locks, etc.

DAM AND LOCK CONSTRUCTION.

Material.	Atlantic.	Pacific.	Total.
	Cu. Yds.	Cu. Yds.	Cu. Yds.
Concrete laid in locks.	85,686	57,294	142,980
Concrete laid in dams and spillways.......	3,573	....	3,573
Fill placed in dams....	641,616	10,898	652,51

Concentration of Useless Materials.

A warehouse for condemned stores is to be built near the Depot Quartermaster's storehouse at Mount Hope where all surplus, obsolete and unserviceable material which has been used in the construction of the Canal will be kept until final disposition is made of it. The plan of procedure in connection with the turning in of this stock is set forth in the Chairman and Chief Engineer's Circular No. 323-Revised, dated August 3, 1910, published in The Canal Record of August 10, and is in line with the recommendations contained in the report of the committee appointed on June 23, 1910, to consider the matter in its various phases.

The amount of dead stock on the Isthmus is constantly increasing and it is estimated that the quantity held by the Depot Quartermaster alone now amounts to between $200,000 and $300,000 in value. Occasionally small lots of surplus or unserviceable material are disposed of on the Isthmus by advertisement and sale, but in the case of heavy machinery there is little or no local demand, and possible buyers from abroad object to making purchase until they have seen it. An instance of the latter kind occurred not long ago. The Central Division had among its surplus stock three Lidgerwood unloaders. The matter was referred to the General Purchasing Officer of the Commission in Washington to see if a purchaser for them could be found. He advised some time afterward that it was impossible to secure a satisfactory proposition without first arranging for an inspection of the machines.

The majority of the committee agreed that it would be better to allow the plant to accumulate on the Isthmus until there is a sufficient quantity to warrant prospective purchasers coming here to look it over, than to establish a place of storage in the United States. It is believed that much of the material may be sold to buyers in Central and South America, and in that case, the transportation of it to New York would be a useless expense.

The steady accumulation of dead stock has occupied space that could be utilized for storing live material, and for that reason, and in order to assemble it in one place, the plan of putting up a small building, which may be enlarged as the occasion arises, was recommended. It was first arranged to establish

NOTES OF PROGRESS

(*Continued.*)

this depot for condemned stores at Paraiso, but the plan was abandoned later in view of the fact that there is no storekeeper or force of clerks at that point to look after it.

The building at Mount Hope will be 40 by 150 feet in size, constructed principally of old materials, and will be situated alongside a spur track extending through the storehouse yard. It will rest on concrete footings and will be floored with old French iron plates. The dead stock will be properly cared for, and machinery parts will be given a coat of lead as a protection against rust.

The committee recommended that Congress be petitioned to enact legislation to govern the sale of these articles, similar to the law in force which permits the sale of condemned articles by the Engineering Corps of the Army.

Pedro Miguel Lock Work.

Work on the east side wall at the Pedro Miguel Locks is advancing, and in sections where slides from the east bank have given some trouble since the advent of the rainy season, it has reached a point where it will serve as a retaining wall. Operations in the center wall have been extended to the end of the core, and in one or two places it has been constructed to its ultimate height. Excavation for the floor and culvert section in the south part of the west chamber is practically completed and most of the culverts and about half of the lily forms in the east chamber are in.

The record of concrete laying in the locks for the five 8-hour working days of the week ending September 10, and the total to that date, follows:

Date	Concrete placed.	Large stone.	Hours worked.	No. of mixers	Total.
Sept. 5	Holiday				
Sept. 6	2,162	69	33:16	4	2,231
Sept. 7	1,906	20	27:00	4	1,926
Sept. 8	2,130	16	30:50	4	2,146
Sept. 9	1,880	8	20:00	4	1,888
Sept. 10	1,498	12	10:50	4	1,510
Total	9,576	125	121:16	4	9,701
Previously reported		2,925			268,208
Grand total		3,050			277,909

Alterations to Schoolbuildings.

The building of a second story four-room addition to the new Canal Zone high school at Gatun was begun on Friday, September 9, with a force of thirty men under the Constructing Quartermaster. The work will be advanced as rapidly as possible in order to complete it by the time school opens on October 3. The addition of a four-room second story to the Ancon school was started about three weeks ago and is nearing completion.

The enlargement of the Empire school by the construction of a two-story addition, containing eight rooms, to the front of the present building, is yet to be made. The plans have been finished, and the carpenter work will probably be commenced this week. The addition will be practically a duplicate of the old building. The front veranda will be left intact, forming an open space between the old and new parts, but the entrances will be changed. Instead of two doors in front of the school, which faces the east, there will be only one, with a doorway on the north side and an emergency doorway on the south side. The 8-foot veranda extending around the old part, both upstairs and down, will be continued in the addition. There will four stairways to the upper floor, two in each part. The office will occupy a corner room on the lower floor of the addition. In the event the improvements are not completed before the beginning of school, temporary arrangements for holding school elsewhere will be made.

Lock Building at Miraflores.

A statement of the concrete laid in the locks at Miraflores for the five 8-hour working days of the week ending September 10, and the total to that date, follows:

Date	Auxiliary Plant.				
	½-Cubic yard mixers.	⅓-Cubic yard mixer.	2-Cubic yard mixers.	Large stone.	Total.
Sept. 5	Holiday				
Sept. 6	220	62	238	8	528
Sept. 7	306	66	274	21	667
Sept. 8	286	44	380	20	730
Sept. 9	269	59	314	15	657
Sept. 10	273	48	402	5	728
Total.	1,354	279	1,608	69	3,310
Previously reported				275	12,144
Grand total.				344	15,454

Lumber and Tie Shipments.

The sailing of the steamer *Bramley* from Puget Sound, with a cargo of lumber for the Commission has been cancelled, and the shipment has been added to that of the steamer *Hornellen* which sailed for the port of Balboa a few days ago. Other shipments of Puget Sound lumber to be made before the existing contracts are filled include a quantity of fir ties.

Gatun Spillway.

The amount of concrete placed in the spillway of Gatun Dam in the week ending September 10, with the total to that date, follows:

Date.	Cubic Yards.		
	Concrete	Large rock.	Total.
September 5	Holiday		
September 6	140	12	152
September 7	138		138
September 8	122	14	136
September 9	154	10	164
September 10	102	12	114
Total	656	48	704
Previously reported			91,162
Grand total			91,876

Transportation Record on South End of Central Division.

On August 1 and 2, the following trains loaded with spoil from Culebra Cut were run out from the Canal at Pedro Miguel and transported to either Miraflores or Balboa dumps:

August 1—78 19-yard 19-car Lidgerwood trains and 4 10-yard 35-car Western dump trains. August 2—78 19-yard 19-car Lidgerwood trains and 3 10-yard 35-car Western dump trains.

On the above dates, the following empty trains were run into the Canal from the above-mentioned dumps:

August 1—76 19-car Lidgerwood trains and 2 35-car Western dump trains. August 2—74 19-car Lidgerwood trains and 4 35-car Western dump trains.

This breaks all previous transportation records on the south end of the Canal for one day.

Money Orders in August.

The money orders issued by the Canal Zone post-offices in August represented $424,465.96 in value, as compared with $409,481.22 in August, 1909. The number issued was 16,176, as compared with 15,466 in the same month last year. Orders payable in the United States amounted to $324,925.11, as compared with $309,540.07 in August, 1909.

Ancon Crusher.

A statement of the rock crushed at Ancon quarry during the week ending September 10 follows:

DATE.	Hours worked.	Cubic Yards.
September 5	Holiday	
September 6	7:25	2,735
September 7	8:10	2,055
September 8	7:20	3,180
September 9	1:30	825
September 10	8:50	2,520
Total	33:15	11,315

Opening of Public Schools.

The Canal Zone public schools will open on Monday, October 3. The preliminary teachers' meetings will be held on Saturday, October 1, in the assembly room of the Ancon schoolbuilding. The white teachers will meet in the morning at 8.30. The colored section will meet in the afternoon at 1 o'clock.

FRANK A. GAUSE,
Superintendent of Schools.

Ancon, September 8, 1910.

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the week ending September 10 follows:

Date.	Hours worked.	Cubic Yards.
September 5	Holiday	
September 6	11:50	2,843
September 7	11:58	3,349
September 8	10:20	2,787
September 9	11:20	3,187
September 10	10:50	2,996
Total	56:18	15,162

Record Month at Miraflores Dumps and Vicinity.

August was the record month at Miraflores dumps and vicinity, when the largest number of trains ever unloaded there—844—was handled. A statement follows:

Location.	Class of cars.	No. of cars.	Cubic yards.
Miraflores Dumps	Lidgerwood flats.	15,637	297,103
Miraflores Dumps	Western dumps	140	1,400
P. R. R. relocation	Lidgerwood flats.	399	7,581
P. R. R. relocation	Western dumps	210	2,100
New Incline	Western dumps	910	9,100
Total		17,296	317,284

Steam Shovel and Dredge Men.

The I. B. of S. S. and D. M. will hold a special meeting on Sunday, September 18, at the I. C. C. lodge hall, Empire, C. Z., at 2. 30 p. m. All members are requested to be present.

WALTER P. TUDOR,
Secretary and Treasurer.

Empire, September 12, 1910.

BALBOA TERMINAL FACILITIES.

Steel Pier to be Remodeled and New Dock of Reinforced Concrete to be Built.

Terminal facilities at Balboa, the Pacific entrance to the Canal, will be increased by (1) remodeling the steel pier now in use, and (2) by constructing a concrete dock along the proposed anchorage basin north of the dock, now used in sand unloading. This decision has been reached after investigations conducted by two committees appointed for that purpose. The intent of the work is to relieve the congestion in handling freight on the present docks, but it will be carried on in such a way, that the improvements made will be useful in the permanent terminal that will be provided, upon the completion of the Canal, for the interchange of cargo. No plans for permanent terminals have been adopted as yet, but investigations are under way at both the Atlantic and Pacific ends of the Canal preparatory to the construction of "safe and commodious harbors," as provided for by the Act of June 28, 1902.

The steel pier which is to be remodeled was built for the Panama railroad and was first used in 1899. It is supported on large caissons spaced on 93-foot centers; longitudinally, is 940 feet long, and will accommodate three 3,000-ton ships at all stages of the tide. It is provided with ten A-frame, swing boom, traveling cranes of 1½ tons capacity. In 1907, this pier was increased from its original width of 50 feet to 80 feet, to provide space for two railroad tracks, supported by piles, running the full length of the pier. The floor was lowered, but the crane runway along the front of the pier was not changed, so that all cargo must now be lifted over the runway or platform in and out of the ships. The cranes on this pier are light, not in good condition, and will not reach far enough over the ships to take cargo from the middle hatches.

At the time the steel pier was enlarged two wooden docks were erected immediately north of it and joined to it. One of these is 320 feet long and is known as dock A. On it are two 4-ton traveling cranes. The other dock, known as dock B, is 658 feet long and has six 4-ton traveling cranes, duplicates of those on dock A. The total length of the three docks is 1,910 feet. These cranes are designed to take cargo from the middle hatches of ships and deliver it under cover of the wharf. The total length of the steel pier, and docks A and B, is 1,910 feet, but there is no connection between them, such as makes it possible to use the cranes interchangeably. A 15-ton pillar crane at the sea end of the steel pier handles heavy cargo. Five ships can be berthed at the united docks at one time, and in 1909, an average of 1,000 tons of cargo a day was handled.

The roof of the steel pier will be raised to accommodate cranes of the type now in use on docks A and B; the steel trusses will be so reinforced as to make them capable of carrying 8 cranes and a concrete slab floor under the crane runways level with the present floor. Eight new cranes of the 4-ton type will be installed in place of the 1½-ton cranes. The 4-ton cranes on docks A and B will be remodeled so as to permit a more rapid handling of cargo between the legs than is now possible. Work on the steel pier will be permanent in character.

The reinforced concrete dock will be 700 feet long and 57½ feet wide. It is estimated that it will cost about $130,000, and that the dredging necessary to make a 300-foot channel to the dock will cost about $200,000. This channel will be enlarged as the construction of the harbor at the Pacific entrance to the Canal advances. Preliminary plans provide for 8,200 cubic yards of excavation for the piers for the dock, 7,000 cubic yards of concrete in the piers, 2,100 cubic yards of concrete in the floor, 624,000 pounds of steel reinforcement, and 25,000 cubic yards of backfilling. The estimate of dredging necessary in front of the dock and leading to it is 2,385,000 cubic yards, but all of this will not be undertaken at the present time. The character of the new dock and the location proposed for it will make it part of the permanent harbor improvements. The construction of the dock and the dredging of its approach will be done by the Pacific Division, and the cost of the work will be charged to the appropriation now available for reconstruction and reequipment of the Panama railroad.

Central Division Unloaders.

A statement of Lidgerwood cars unloaded in the Central Division during the month of August follows:

Location.	No. of unloaders.	No. of trains.	No. of cars.
Balboa	3	1,004	19,076
Miraflores	3	844	16,036
Gamboa	2	641	12,179
Tabernilla	2	596	11,324
Totals	10	3,085	58,615

This record breaks all records with 10 unloaders.

Day's Work of 17 Steam Shovels.

On September 2d, 17 steam shovels, working in the Culebra construction district of the Central Division, excavated 29,335 cubic yards during the working day of eight hours, an average of 1,726 cubic yards per shovel for the day. During this time the shovels were under steam 136 hours and were actually working 90 hours and 55 minutes and were waiting for cars 29 hours and 30 minutes. The other delays were due to mining, cleaning track after blasts, repairing shovels, moving shovels back, slides and similar causes.

Examination for Colored Teachers.

An examination for eligibility to appointment as teacher in the colored schools will be held on Thursday, September 22, at the Ancon schoolbuilding. Sessions from 8 to 12 and 1 to 5; subjects, arithmetic, American history, grammar, hygiene, geography, reading, writing, spelling, and method. Spelling and writing will be graded on the manuscript in other subjects. The examination is open to all.

FRANK A. GAUSE,
Superintendent of Schools.

Ancon, September 8, 1910.

Missing Man.

Information is wanted concerning the whereabouts of Jay Winans of Oakland, Cal. Any one having knowledge of him is requested to address W. C. Winans, General Delivery, Oakland, Cal.

Three hydraulic elevators, one situated in the bakery and two in the commissary storehouse at Cristobal, have recently been installed. They are used for transporting supplies between the first and second floors, and are operated by small electric pumps.

STEAM SHOVEL RECORDS.

Work of Central Division Shovels in August.

During the month of August the total amount of material excavated in the Central Division was 1,612,396 cubic yards, of which 434,775 cubic yards were classified as earth and 1,177,621 cubic yards as rock. Of this quantity, 1,602,738 cubic yards were removed by steam shovels; 4,844 cubic yards were blasted and washed out by high water; 278 cubic yards were removed by hand, and 4,536 cubic yards were pick and shovel excavation by contract.

The high record of the month was made by shovel No. 208, working 27 days in the Culebra District, which excavated 57,292 cubic yards of rock and earth. The second best record was made by shovel 223, working 26 days in the Culebra District ,which excavated 49,739 cubic yards of rock.

The best record for a shovel of the 70-ton class was made by shovel No. 108, working 27 days in the Chagres District, which excavated 41,928 cubic yards of earth.

Shovel No. 202, working in the Culebra District, made the high record for one day by excavating 3,553 cubic yards of earth on August 16. Shovel No. 108, working in the Chagres District, excavated 1,640 cubic yards of earth on August 8 and 18, the high records for one day for a 70-ton shovel during the month.

Except where noted, monthly records are computed by place measurement, while the daily records are based on car measurement. The best records for the month and for one day in each district are shown below:

BEST RECORDS FOR THE MONTH.

Shovel No.	Cubic Yards.			No. of days at work.
	Earth.	Rock.	Total.	
CHAGRES DISTRICT.				
108	41,928	....	41,928	27
126	32,574	....	32,574	23
EMPIRE DISTRICT.				
209	....	45,492	45,492	27
220	8,228	35,088	43,316	27
CULEBRA DISTRICT.				
208	11,460	45,832	57,292	27
227	....	51,063	51,063	27

BEST RECORDS FOR ONE DAY.

Shovel.	Location.	Date.	Character of material excavated.	Cubic Yards.
108	Chagres	Aug. 8-18	Earth	1,640
108	Chagres	Aug. 12	Earth	1,630
115	Chagres	Aug. 19	Earth	1,620
228	Empire	Aug. 23	Rock	2,508
228	Empire	Aug. 31	Rock	2,488
228	Empire	Aug. 30	Rock	2,285
232	Empire	Aug. 24	Rock	2,200
202	Culebra	Aug. 16	Earth	3,553
208	Culebra	Aug. 26	Rock	2,926
231	Pedro Miguel	Aug. 31	Rock	2,014
231	Pedro Miguel	Aug. 27	Earth	1,843
231	Pedro Miguel	Aug. 30	Earth	1,729
125	Pedro Miguel	Aug. 17-19	Earth	1,482
231	Pedro Miguel	Aug. 29	Earth	1,710

The sailings of the Royal Mail Steam Packet Company from Colon for New York, have been changed from Wednesdays to Mondays, effective with the sailing of the *Tagus* on October 3.

The following vessels arrived at and departed from the port of Balboa during the week ending September 10:

Arrivals—September 5, *Guatemala*, from south ports, *City of Sydney*, from San Francisco; September 8, Arica, from Guayaquil, *Manavi*, from intermediate ports; September 10, *Yorktown*, from San Juan del Sur.

Departures—September 3, *Ecuador*, to Guayaquil; September 6, *Huasco*, to south ports; September 7, *Son Juon*, to San Francisco.

RECORD OF CANAL WORK SINCE AMERICAN OCCUPATION.

MONTHLY TOTALS BY CUBIC YARDS OF EXCAVATION AND LOCK AND DAM CONSTRUCTION.

[*All figures are of work useful for the completed Canal.*]

DRY EXCAVATION.

CENTRAL DIVISION.

MONTHS.	CULEBRA SECTION.*							CHAGRES SECTION.**			
	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1907.	1908.	1909.	1910.
January	...	70,650	120,990	566,750	1,227,022	1,150,249	1,323,693	...	169,447	389,399	175,802
February	...	75,200	168,410	639,112	1,248,265	1,194,454	1,259,173	...	200,145	450,182	286,309
March	...	132,840	239,178	815,270	1,290,885	1,434,597	1,509,728	...	324,233	619,491	484,846
April	...	126,749	213,177	879,527	1,242,574	1,272,746	1,288,845	...	329,483	510,020	428,777
May	27,556	75,935	196,209	690,365	960,840	1,126,963	1,099,279	...	235,902	386,170	248,974
June	32,551	76,905	212,623	624,586	1,134,032	1,242,134	1,305,141	...	322,145	275,900	164,389
July	31,599	78,570	159,789	770,570	1,121,325	1,200,828	1,153,810	...	345,757	233,897	166,106
August	35,056	49,210	244,823	786,866	1,173,800	1,173,370	1,377,714	2,900	366,810	231,543	234,404
September	25,220	44,085	291,452	753,468	1,122,860	1,235,978	...	21,546	346,948	235,818	...
October	19,695	52,940	327,009	834,499	1,160,101	1,302,901	...	25,627	424,911	221,409	...
November	28,860	60,540	221,642	790,632	1,022,576	1,070,792	...	44,044	336,390	93,619	...
December	42,935	70,630	307,689	1,025,485	1,210,046	1,152,022	...	98,652	383,948	105,044	...
Totals	243,472	914,254	2,702,991	9,177,130	13,914,326	14,557,034	10,317,383	192,769	3,786,119	3,752,492	2,189,607

ATLANTIC DIVISION.

MONTHS.	COLON (MINDI)†		GATUN LOCKS, DAM AND SPILLWAY.††		
	1909.	1910.	1908.	1909.	1910.
January	45,664	...	292,155	102,690	125,011
February	46,046	...	282,797	95,031	123,738
March	70,713	...	374,598	90,051	132,007
April	74,368	...	373,456	70,009	103,243
May	71,407	...	266,747	52,786	82,958
June	80,101	...	244,951	36,556	88,088
July	82,378	...	213,359	39,058	95,503
August	66,249	...	188,262	40,346	99,737
September	61,437	...	145,990	49,945	...
October	72,643	...	154,064	57,321	...
November	42,009	...	118,278	63,452	...
December	...	...	119,904	96,590	...
Totals	713,015	...	2,774,561	793,835	850,285

PACIFIC DIVISION.

MONTHS.	PEDRO MIGUEL LOCKS.‡			MIRAFLORES LOCKS, DAMS AND SPILLWAY.‡‡		
	1908.	1909.	1910.	1908.	1909.	1910.
January	...	83,726	27,320	7,203	61,202	31,479
February	...	58,242	9,486	39,046	53,689	15,300
March	...	95,624	6,784	73,194	51,417	18,184
April	...	101,365	9,129	98,943	60,060	12,148
May	...	57,523	10,405	73,023	47,588	20,250
June	13,228	70,971	8,420	68,691	55,653	21,994
July	22,648	77,503	4,410	104,369	50,999	11,990
August	22,217	58,025	12,789	94,248	35,446	17,548
September	28,833	48,825	...	90,923	31,803	...
October	48,875	39,002	...	74,700	25,349	...
November	55,401	20,207	...	52,930	18,644	...
December	65,578	28,342	...	69,650	20,083	...
Totals	256,780	739,355	88,743	846,920	511,933	148,893

*Total to September 1, 1910, 51,826,590 cubic yards.

**Total to September 1, 1910, 9,920,987 cubic yards.

†Total to Sept. 1, 1910, 1,476,821 cubic yards; in this total are included 172,851 cubic yards removed in 1907, and 590,955 cubic yards removed in 1908.

††Total to Sept. 1, 1910, 5,785,488 cubic yards; in this total are included 26,628 cubic yards excavated October to December, 1906, and 1,340,179 cubic yards in 1907; there were also 38,425 cubic yards removed by dredges at Gatun Dam site in 1907.

‡Total to September 1, 1910, 1,084,878 cubic yards.

‡‡Total to September 1, 1910, 1,507,746 cubic yards; there were also 78,233 cubic yards excavated at Balboa locks and dams in 1907; and 239,891 cubic yards at different points in prism to September 1, 1910.

WET EXCAVATION.

ATLANTIC DIVISION.

MONTHS.	ATLANTIC ENTRANCE.§				GATUN LOCKS.	
	1907.	1908.	1909.	1910.	1908.	1909.
January	111,100	490,701	521,050	510,055	...	97,043
February	110,002	427,722	444,910	493,448	...	132,291
March	84,145	546,886	461,208	412,325	...	141,838
April	69,889	496,366	470,635	190,574	...	17,938
May	133,847	564,386	315,370	447,578	...	52,011
June	124,118	572,749	182,575	458,021	...	38,829
July	109,922	625,497	348,451	423,092	...	...
August	194,297	638,217	422,846	508,829	...	...
September	403,842	624,776	410,574	...	...	...
October	415,120	505,260	314,778	...	...	...
November	422,797	570,832	457,889	...	...	...
December	442,835	679,604	489,121	...	8,583	...
Totals	2,621,914	6,742,996	4,839,407	3,443,922	8,583	479,950

PACIFIC DIVISION.

MONTHS.	PACIFIC ENTRANCE.§§						Miraflores Locks.§§§
	1905.	1906.	1907.	1908.	1909.	1910.	1910.
January	...	95,940	94,710	460,250	469,529	518,936	...
February	...	95,940	93,480	663,519	671,477	285,791	...
March	...	116,820	92,319	783,281	865,696	462,588	...
April	...	110,700	104,855	676,539	731,767	534,322	...
May	...	112,340	122,157	530,466	720,753	484,509	...
June	50,676	62,697	133,575	656,621	844,685	475,486	...
July	41,533	98,400	108,338	696,170	733,181	515,782	...
August	54,530	111,930	168,284	737,774	623,263	506,969	...
September	114,308	105,780	153,975	750,080	662,976	...	...
October	81,836	97,170	357,122	762,276	720,920	...	...
November	71,176	92,988	365,423	609,089	627,791	...	...
December	71,094	90,528	349,551	729,960	727,460	...	...
Totals	485,153	1,191,233	2,143,789	8,056,025	8,399,498	3,784,383	...

§Total to September 1, 1910, 19,075,704 cubic yards; in this total are included 399,820 cubic yards excavated in 1905, and 1,027,645 cubic yards in 1906.

§§Total to September 1, 1910, 24,060,081 cubic yards; there were also 172 cubic yards removed by steam shovels during October, 1908.

§§§Total to September 1, 1910, 309,647 cubic yards, all of which was taken out by dredge in 1909.

CONCRETE IN LOCKS AND DAMS.

MONTHS.	GATUN LOCKS.			PEDRO MIGUEL LOCKS.			MIRAFLORES LOCKS.	
	1909.	1910.	1911.	1909.	1910.	1911.	1909.	1910.
January	...	54,136	...	...	16,273	...	...	...
February	...	55,696	...	...	13,218	...	...	146
March	...	60,998	...	...	18,793	...	...	314
April	...	63,227	...	...	24,522	...	...	13
May	...	74,273	...	...	29,576	...	...	27
June	...	89,391	...	...	30,631	...	...	1,603
July	...	84,001	...	...	41,464	...	28	3 672
August	1,298	85,686	...	...	51,264	...	74	6,030
Sept	12,294	...	...	2,370	...	...	...	...
October	29,378	...	...	8,310	...	...	...	...
Nov'mber	30,270	...	...	10,169	...	...	...	...
December	42,832	...	...	13,007	...	...	...	...
Total	116,072	567,408	...	33,856	225,741	...	102	11,805

From March 17, 1909, to September 1, 1910, there were placed in the Spillway of Gatun Dam 90,785 cubic yards of concrete, including 3,573 cubic yards placed in July, 1910; in Miraflores Dam there were placed 321 cubic yards up to September 1, 1910.

FILL PLACED IN DAMS.

MONTHS.	GATUN.*		PEDRO MIGUEL.†	MIRAFLORES.‡	
	1910.		1910.	1910.	
	Wet.	Dry.	Dry.	Wet.	Dry.
January	178,254	236,994	...	...	28,151
February	292,215	271,788	11,510	...	1,438
March	210,387	332,661	22,860	...	5,385
April	242,440	263,437	31,394	...	...
May	249,283	204,275	23,572	...	6,480
June	384,166	271,283	1,350	...	7,356
July	462,092	187,713	...	...	4,290
August	406,606	235,010	...	...	10,898
September	...	...	...	...	...
October	...	...	...	...	...
November	...	...	...	...	...
December	...	...	...	...	...
Total	2,425,443	2,003,161	90,686	...	63,998

*Dry fill begun in January, 1907, and 2,096,477 cubic yards of wet, and 3,241,418 cubic yards of dry fill were placed in 1907, 1908 and 1909.

†170,166 cubic yards placed in dams up to December, 1909, inclusive.

‡138,587 cubic yards of wet fill and 472,091 cubic yards of dry fill were placed in dams up to December, 1909.

CANAL EXCAVATION TO DATE.

By French Companies		78,146,960
French excavation useful to present Canal		29,908,000
By Americans—		
Dry excavation	71,920,806	
Dredges	43,972,390	
Total		115,893,196
May 4 to December 31, 1904	243,472	
January 1 to December 31, 1905	1,799,227	
January 1 to December 31, 1906	4,948,497	
January 1 to December 31, 1907	15,765,290	
January 1 to December 31, 1908	37,116,735	
January 1 to December 31, 1909	35,096,166	
January 1 to August 31, 1910	20,923,809	

TOTALS BY DIVISIONS AND AMOUNT TO BE EXCAVATED.

DIVISIONS.	Amount excavated.		Remaining to be Excavated.	
Atlantic—				
Dry excavation	7,262,309	26,864,971	1,010,745	16,492,374
Dredges	19,602,662		15,481,629	
Central—				
Culebra Cut	51,826,590	61,747,577	32,360,134	35,377,441
All other points	9,920,987		3,017,307	
Pacific—				
Dry excavation	2,910,920	27,280,648	3,469,222	14,774,755
Dredges	24,369,728		11,305,533	
Grand totals		115,893,196		66,644,570

ROOSEVELT ON THE CANAL.

Extract from Speech at Omaha on September 2.

In a speech at Omaha on September 2, ex-President Roosevelt spoke of the Panama Canal as follows:

"As regards the Panama Canal, I really think that outside nations have a juster idea than our people of the magnitude and success of the work. I wish our people realized what is being done on the Isthmus. If a man of intelligence who had never left this country asked me whether I would advise him to make a short trip to Europe or a trip to the Panama Canal, I would, without hesitation, advise him to go to the Panama Canal. He would there see in operation the completing of one of the great feats of modern times. Col. Goethals and the men working under him are rendering a service to this country which can only be paralleled in our past history by some of the services rendered in certain wars.

"Six years ago last spring the American Government took possession of the Isthmus. The first two years were devoted to the sanitation of the Isthmus, to assembling the plant and the working force, and providing quarters, food, and water supplies. In all these points the success was extraordinary. From one of the plague spots of the globe, one of the most unhealthy regions in the entire world, the Isthmus has been turned into a singularly healthy place of abode, where the death rate is small and where hundreds of children are now being raised under as favorable conditions as in most parts of the United States. The quarters, food, and water supply are excellent, and the plant the best ever gathered for such a purpose. Active excavation on a large scale did not begin until January, 1907. Three years and a half have gone by since then, and three-fifths of the total excavation has already been accomplished.

"The amount taken out has passed anything which previous experience warranted us in believing to be possible. In 1908 and 1909 the monthly average of earth and rock removed was 3,000,000 cubic yards, notwithstanding the fact that nine months of each year constituted a season of very heavy rainfall. There remains to be excavated only about 60,000,000 cubic yards. If we could keep up the past average of excavation, this should be done in twenty months, but it is impossible to maintain such a ratio as the depth increases, for the output necessarily diminishes as the field of operation narrows. Still, it is certain that such a rate can be maintained as will enable the workers to finish the excavation considerably in advance of the date fixed for the opening of the Canal—January 1, 1915. Indeed, I shall be surprised if the Canal cannot be opened six months or even a year in advance of the time set.

"The work has two great features: The Culebra Cut, which I have been considering, and the great Dam at Gatun. The latter is to imprison the waters of the Chagres and other streams into a lake with an area of 164 square miles. This work is advancing steadily, and just as successfully as the work on the Culebra Cut. The water which is ultimately to fill the lock is now flowing through the concrete spillway in the center of the Dam, the Chagres having been diverted from its bed and placed under complete control. The construction of the Dam has advanced sufficiently to convince the engineers in charge of the work of its absolute stability and imperviousness. The concrete work on the lock is advancing so rapidly that the first double set at Gatun will be completed this coming November, and the engineer in charge has announced that all the concrete in the locks will be in place two years hence.

"The date of the final completion and formal opening of the Canal to the commerce of the world will be determined by the time consumed in placing the great steel gates, emergency dams and all appliances for operating the locks. But those in charge of the work announce without hesitation that everything will be finished well in advance of January 1, 1915.

"We now have a further duty to perform in connection with it, and that is to fortify it. We are in honor bound to fortify it ourselves, and only by so doing can we effectively guarantee its neutrality, and, moreover, effectively guarantee that it shall not be used against us. The chief material advantage—certainly one of the chief material advantages—which we shall gain by its construction is the way in which it will, for defensive purposes, double the power of the United States Navy. To refuse to fortify it, and, above all, to consider for a moment such an act of utter weakness and folly as to invite other nations to step in and guarantee the neutrality of this purely American work (and thereby really to make it certain that in the event of war we should find the Canal used against us, as our fleets would be forbidden to pass through it, or else our opponents' fleets permitted to), would be to incur, and quite rightfully, the contempt of the world. It would mean the complete abandonment of the Monroe doctrine. It would be a wicked blow to our prestige on the Pacific, and, moreover, it would be in its essence treason to the destiny of the republic."

Bible Societies.

The American Bible Society and the British and Foreign Bible Society have been active on the Isthmus for many years, operating through their general agencies for South America and the West Indies located in Guatemala.

The American Society established a branch in Guatemala in 1895 and a subagency at Panama in January, 1910, with the Rev. Charles W. Ports, of the Methodist Episcopal Church, as its representative. Mr. Ports employs two colporteurs, one a Chilean, to work among the Spanish-speaking people, and the other, a West Indian, for work among the negroes. The territory covered by the former lies along the coast on the Pacific side as far as Chamé, and to Nombre de Dios on the Atlantic side. The West Indian sells on the street, usually following the pay car each month, stopping at the villages in the Canal Zone. At other times in the month, he visits the negro quarters and the outlying settlements and villages in the bush. A conservative estimate places the number of Bibles sold annually in this way at 4,000. The books are brought into the country duty free, through the courtesy of the Panamanian government. The society has presented Bibles to Ancon Hospital, and to several of the hospitals and sick camps along the line of the Canal, and to the penitentiary.

The work of the British and Foreign Bible Society is at present directed by the Rev. Ernest G. Cooke, pastor of the Wesleyan Methodist Mission in Colon, who acts as volunteer agent. Mr. Cooke selects his helpers from men in charge of missions in the Zone villages. The territorial agent from Guatemala recently paid a visit to the Isthmus for the purpose of perfecting plans for the establishment of a regular agency in Colon, and as a result of his visit, Mr. M. P. Kennedy is expected to arrive from England to take charge of the work which will be extended to the white population in the Canal Zone within a short time. A room has been secured for a general storehouse and headquarters. This society pays a duty of ten per cent ad valorem on all Bibles imported.

Masonic Affairs.

An all-day session of the recently instituted lodge of Royal Arch Masons at Las Cascadas was held on Labor Day, when a number of degrees were conferred. The lodge holds meetings every other Saturday night and a special train is run between Panama and Las Cascadas to accommodate members living in Ancon, Corozal, Pedro Miguel, Culebra and Empire who desire to attend the meetings. The train is manned by members of the lodge who furnish their services free of charge, and alternate with each other in making the runs.

Preparations are being made for a banquet to be held at Colon on October 15, by the Masonic Clubs of the Isthmus. It will take place at the Washington Hotel and a program of music, addresses, etc., is being arranged.

Obituary.

William T. Harrington of San Francisco died at Ancon Hospital on September 5 after an illness of about three months. He was 42 years of age and came to the Isthmus from San Francisco in March of this year, and for a few weeks was employed at the Cristobal marine shops.

Gerhard Lentin, a sailor on the steamer *Kyleakin*, which arrived at Cristobal from Mobile on August 18, with supplies for the Commission, died at Colon Hospital on September 8, from typhoid fever complicated by intestinal hemorrhage. He was a native of Germany, 18 years of age, and unmarried. He was buried in Mount Hope cemetery.

Band Concert.

The Isthmian Canal Commission Band will give a concert at Gorgona, C. Z., on Sunday, September 18, 1910, at 6 p. m. The program follows:

1	March—*Calvary Commandery*	Clarke
2	Selection—*The Dollar Princess*	Fall
3	Oriental Rag—*Turkish Trophies*	Egan
4	Overture—*Poet and Peasant*	Suppe
5	*a* Barn Dance—*By the Light of the Silvery Moon*	Edwards
	b Medley March—*Has Anybody Here Seen Kelly*	Murphy
6	Waltz—*Cupid Astray*	Rolfe
7	Concert Piece—*Among the Lilies*	Frey
8	El Gitanillo—*Tango*	Franco
9	Medley Selection—*Mills'* 1910 Introducing "Lily of the Prairie," "I'd Like to be the Fellow That Girl Is Waiting For," "Highland Mary," "Everybody's Happy When the Moon Shines," "You For Me When You're Sweet Sixteen," "Comical Eyes," "Sicilian Chimes," "My Friend Jim-a-da-Jeff," and "Margarita."	Schuls
10	March—*Put On Your Old Gray Bonnet*	Wenrich

Chas. E. Jennings, *Musical Director.*

The next concert will be given at Empire on September 25, at 6 p. m.

License at Empire.

ANCON, C. Z., September 12. 1910.

In accordance with a resolution of the Isthmian Canal Commission, adopted September 1, 1910, Mr. C. P. Gibson has been granted a license for the retail sale of intoxicating liquors at Empire for the year July 1, 1910 to June 30, 1911.

A. MCGOWN, *Acting Collector of Revenues.*

LIQUIDATED DAMAGES.

Comptroller of Currency Holds Clause in Contracts Null.

The Comptroller of the Treasury has rendered a decision to the effect that the form of contract which has been in use by the Commission since 1907 does not provide for liquidated damages, but that the clause supposed to cover this subject is in fact a penalty clause and permits of charging only actual damages against the contractor. The question was raised by J. H. Leonard & Co. to whom a contract for plumbers' supplies was let, and who were assessed $150.93 liquidated damages for failure to deliver on time. The clause in the form of contract referred to provides:

"Article II. The above materials and supplies properly packed at the contractor's expense shall be delivered as above on or before (date). If not delivered on or before the said date one-tenth of one per cent of the total cost of the undelivered materials and supplies shall be deducted for each day's delay, as liquidated damages for the delay, until satisfactory delivery or performance shall have been made, or until such time as the Commission may reasonably procure similar materials or articles elsewhere ******** Provided, however, that delays caused by strikes, acts of God, or public enemies, to the extent to which the same in the judgment of the Commission may justify the delay, or delays which cause no damage or inconvenience to the Government, when expressly waived by the Commission, shall not be charged against the contractor hereunder."

The Comptroller decided on June 6, 1910, that the clause printed above does not provide for liquidated damages, and on appeal from this decision reaffirmed his decision of the previous date, holding:

"Either Article II provides for liquidated damages or it does not. If it does not, then it is a stipulation for a penalty under which only the actual provable damages are recoverable, but if it be in fact a valid provision for liquidated damages, then it should be enforced as written, upon proof of the violation of the contract and without proof of the damages actually sustained. Whether or not said provision is one for liquidated damages, as expressed, and what is the intent of the parties with respect thereto, must be determined by a proper legal construction of the language used by them in expressing that intention.

"The proviso that 'delays which cause no inconvenience or damage to the Government, when expressly waived by the Commission, shall not be charged against the contractor,' is diametrically opposed to one of the basic principles underlying the liquidation of damages, viz., that the parties by their action in agreeing upon a measure of damages in liquidation of the uncertain damages, have settled in advance the charge to be made on account of such damages arising from delays for which the contractor is chargeable, and thereby have closed the door to the admission of evidence as to whether or not said damages were actually sustained. As said in the decision sought to be reconsidered and revised, such a clause is utterly antagonistic to a liquidated damage clause. The damages are liquidated or not liquidated upon the facts and probabilities in the minds of the parties at the time the contract is executed, and do not depend upon the happening of such a future fact as whether the Government needs the things contracted for or does not need them at the time specified for them to be furnished. The facts, supposed to exist at the time the contract is made, govern. I am of the opinion that the clause "or delays which cause no damage or inconvenience to the Government, when expressly waived by the Commission," effectually nullifies the provision for per diem deductions on account of the contractor's delays in deliveries, said to be as 'liquidated damages.' * * * * *"

It is estimated that from $100,000 to $150,000 have been deducted from contractors' bills in accordance with the "liquidated damages" clause of the contract, which is now declared ineffective.

PERSONAL.

The Right Hon. James Bryce, British Ambassador to the United States, and Mrs. Bryce, arrived on the Isthmus September 9, and remained here for two days visiting all parts of the Canal work. They were the guests of Col. and Mrs. W. C. Gorgas during their stay. They sailed from Balboa on September 11 for a tour through South America, during which they will visit Lima, Lake Titicaca, Valparaiso, and pass through the Strait of Magellan to Buenos Aires, whence they will sail for England.

Maj. Chester Harding, and Maj. Edgar Jadwin sailed for the States on their annual leave, on the *Cristobal*, on September 8.

Maj. Henry A. Brown, chaplain, U. S. A., and Archdeacon Henry B. Bryan sailed for the States on the *Cristobal*, on September 8.

Mr. A. B. Nichols sailed for the States on his annual leave of absence, on the *Colon*, on September 5.

A. V. D. Candler, who has been designated to take charge of the inspection of the new ladder dredge to be built at Renfrew, Scotland, for use at the Pacific entrance, sailed from New York for his destination on August 31. He is connected with the Purchasing Department, and while on the Isthmus some time ago had an opportunity to familiarize himself with the type of dredge to be constructed under the recent award.

Fancy Dress Ball at Colon.

A fancy dress ball will be held at the Lincoln House on the evening of October 15, under the auspices of the Philanthropy Department of the Woman's Club of Cristobal for the benefit of the Salvation Army. Tickets may be obtained from any member of the club at $1 each.

At a recent meeting of the board of governors of the Colon Club it was decided to dispense with the regular dance on Saturday evening, October 15, because on that evening the floor will be given over to the Philanthropy Department of the Woman's Club for the annual fancy dress ball.

Church Notes.

The corner stone of the United Methodist church at Pedro Miguel will be laid at 3 o'clock on the afternoon of September 18, by Dr. J. Thomas of Panama, assisted by representatives of the Christian Mission church and members of negro fraternal societies. A procession will be made from the Baptist Mission house to the site of the new church.

The ceremony of laying the corner stone of the new Episcopal church for West Indians in Gatun will take place at 3.30 p. m., on Sunday, September 18. Four principal stones will be laid, one by Mrs. W. L. Sibert, one by Judge Gudger, one by W. H. Carrington, and one by the Amalgamated Friendly Societies. Addresses will be made by Judge Gudger, and Judge Thomas E. Brown, jr.

OFFICIAL CIRCULARS.

Transfer of Transportation Men—Moving Locomotives from Gorgona Shops—Safeguarding Labor Trains.

Culebra, C. Z., September 7, 1910.

Heads of Departments and Divisions:

The following recommendations submitted by the Transportation Committee are approved:

"The committee recommends that in case of transfer of transportation men between divisions of the Isthmian Canal Commission or between the Isthmian Canal Commission and the Panama railroad, a transcript of the service record of the man transferred accompany the regular transfer slip, this transcript to contain a brief outline of each offense and a statement of the discipline applied in each case.

"On account of the heavy work on all locomotives having been centered at Gorgona, it becomes necessary almost daily for the Panama railroad, or one or more divisions of the Isthmian Canal Commission, to move engines between Gorgona shops and some other point on the Isthmus. In the interests of economy it is recommended that a crew be assigned to this service, such crew to be carried by the Central Division and charge to be made against other divisions or the Panama railroad for services performed.

"With a view to safeguarding employes riding on labor trains, it is the recommendation of the committee that all trains following labor trains be held five minutes before following such labor train unless the latter has passed into the next block ahead."

Geo. W. Goethals,
Chairman and Chief Engineer.

Steerage Rate on P. R. R. Vessels.

Culbbra, C. Z., September 9, 1910.

Circular No. 175-D:

Effective September 15, 1910, the reduced steerage rate of $10 heretofore allowed on Panama railroad steamships will be increased to $15.

Geo. W. Goethals,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Acting Division Engineer.

Culebra, C. Z., September 3, 1910.

Circular No. 350:

Effective September 5, 1910, Mr. John M. G. Watt will act as Division Engineer of the Pacific Division during the absence of Mr. S. B. Williamson, on leave.

Geo. W. Goethals,
Chairman and Chief Engineer.

Clerks Without Knowledge of Typewriting.

Culebra, C. Z., September 10, 1910.

Heads of Departments and Divisions:

It has been the practice of the United States Civil Service Commission to maintain five registers of clerks for appointment to apply on requisitions from the Isthmus, as follows: Clerks with knowledge of typewriting; clerks with business experience; clerks with railroad experience; clerks with timekeeping experience; clerks with bookkeeping experience. In connection with the majority of requisitions forwarded for clerks during the past year, knowledge of typewriting has been specified. As the result, this particular register has been exhausted, and difficulty has been experienced in filling requisitions, while eligibles with other qualifications have had little chance of appointment. It is requested that in filling future vacancies, requisitions be made for clerks without knowledge of typewriting whenever the interests of the service will permit.

Geo. W. Goethals, *Chairman.*

Chief Dispatcher, P. R. R.

Colon, R. P., September 8, 1910.

Circular No. 188:

Effective Sunday, September 11, L. B. Maggard is appointed Chief Dispatcher, reporting to this office. See rules 722, 723, and 724, Book of Rules. At the same time all agents heretofore reporting to the Master of Transportation will report to this office direct.

J. A. Smith, *General Superintendent.*

Auction of Unclaimed Goods.

Colon, September 10, 1910.

In order to recover freight and storage charges, the Panama railroad will dispose of the accumulation of over and unclaimed shipments now in its possession, by public auction Wednesday, October 5, 1910, at 9 a. m., sale to be held on dock 11, Cristobal, C. Z.

The items to be sold consist of a miscellaneous assortment of wines, liquors, household goods, building material, stationery, groceries, dry goods, machinery and merchandise in general, all of which has been held six months and over in an effort to locate owner.

J. A. Smith, *General Superintendent.*

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

STATISTICAL REPORT FOR AUGUST.

Total membership	1,791
Total number of bowling games	6,985
Number different tournaments	12
Total number tournament players	231
Total number pool and billiard games	18,379
Total income from soda fountains	$2,766.77
Number different men using gymnasiums	314
Total attendance of men using gymnasiums	2,145
Number enrolled in chess and checker clubs	78
Number enrolled in glee clubs	31
Number enrolled in dramatic and minstrel clubs	44
Number enrolled in camera clubs	84
Number enrolled in discussion clubs	47
Number enrolled in educational classes	5
Number of members of libraries	728
Total number of books withdrawn	1,998
Number of religious meetings	1
Attendance	150
Number of lectures	1
Attendance	25
Number of imported entertainments	4
Attendance	851
Number of local entertainments	16
Attendance	3,084
Number functions outside association management	10
Attendance	1,194
Number afternoons for women	46
Attendance	423
Number evening functions to which women invited	30
Attendance	1,543
Number different men on committees	198
Number of men called on in hospitals	236
Number of letters written at public tables	6,384
Total attendance at buildings	72,156
Average attendance per day	2,327
Number of beds used during the month	380

BOYS' DEPARTMENT.

Number of members	82
Number of afternoons for boys	59
Average attendance per afternoon	35
Total attendance in systematic gymnasium work	555
Outings and other special features	2

GENERAL.

The interassociation tenpin tournament was started Saturday night, September 10, with two teams entered from each of the five Zone associations. These teams known as first and second teams will bowl for ten weeks for an association trophy prize; then, beginning November 19, a picked team representing each association, whose members will be chosen from teams one and two, will bowl ten weeks for individual team prizes. The results of the games will be published each week in THE CANAL RECORD.

Miss Gay Zenola MacLaren will fill the following return engagements at the clubhouses: September 15, Gatun; September 20, Culebra.

CULEBRA.

The discussion club meeting on September 7 was led by E. A. Putnam; subject, "What Is Failure?" This club meets every Wednesday evening at 7.30. The next meeting will be led by F. C. Freeman; subject, 'Our Thoughts."

The pool and billiard tournament begins on Monday, September 19. The prize is a pennant.

The bowling committee has arranged a bowling tournament to begin this week. Three prizes are offered, one for high average, one for second, and one for the highest pin fall. This tournament will be a handicap tournament based on the scores of the last two months.

Saturday, Cristobal's second team will play at Culebra, and Culebra's first team will go to Cristobal.

The high score last week for bowling was rolled by E. P. Case on Saturday night; score, 205.

The Gorgona first team took three straight games from the Culebra first team on the Culebra alleys on Saturday night, September 10. Following is the score:

Culebra First Team.				Gorgona First Team.			
Herrington	165	181	163	Roper	192	181	158
Case	141	205	138	King	164	170	142
Cohen	196	129	169	White	199	196	188
Hayes	127	176	149	Sexton	144	163	201
Dougherty	176	156	125	Otis	164	162	176
Total	805	847	744	Total	863	872	865

EMPIRE.

The Empire clubhouse posts every night the total number of cars and engines used, and the total yardage for the day of the Central Division.

C. J. Huson has been elected captain of the first Y. M. C. A. bowling team, and Samuel Bardelson captain of the second team.

There were 37 certified delegates to the literary society's "county convention" last Friday night. Mr. Porter was elected temporary chairman, Mr. Warwick, permanent chairman, and Mr. Sawtelle, permanent secretary. The following candidates were nominated for the coming "election:" For sheriff, J. H. McLean; county judge, Judge Mark A. Hall; county solicitor, Cap. McNiel; county commissioners, Messrs. Ross, Harlan and Simpson; county treasurer, Philip Kelley; clerk of court, H. W. Sawtelle; coroner, Dr. Erdman.

The following high scores were made on the bowling alleys during the week ending September 10: Pearson, 204; Potter, 223; Shaughnessy, 201, 219; Goolsby, 215; Nicodemus, 206.

The match between Empire and Cristobal on September 5, resulted in favor of Cristobal. Following is the score:

Cristobal.				Empire.			
Louch	180	168	176	Goolsby	128	163	139
Collins	165	174	168	Nicodemus	134	130	167
Adams	158	151	172	Bardelson	156	163	150
Rabbitt	141	155	165	Sawtelle	122	164	132
Bullard	173	151	168	Gustavson	160	178	122
Total	817	799	849	Total	700	798	710

The match between Empire and Culebra on September 7, resulted in favor of Empire. Following is the score:

Culebra.				Empire.			
Hall	155	149	143	Nicodemus	206	173	198
Herrington	175	129	94	Goolsby	150	215	175
Case	132	182	155	Sawtelle	185	177	125
Cohen	152	161	185	Leon	163	190	....
Dougherty	193	162	133	Gustavson			162
				Bardelson	163	185	152
Total	807	783	710	Total	867	940	812

GORGONA.

The Cristobal basketball team defeated the Gorgona team on Saturday night, September 10, by a score of 30 to 20.

Moving pictures recently received from the States will be shown at the clubhouse on Friday night, September 16.

A shop league basketball game will be played on Thursday, September 15, at 8 p. m.

Gorgona second team defeated Culebra second team at bowling on the Gorgona alleys Saturday night, September 10, as follows:

Culebra Second Team.				Gorgona Second Team			
Koperski	131	....	157	Stoehr	150	124	108
Baumer	161	146	127	Stewart	163	183	179
Huttlemeier	142	190	129	Haldeman	142	142	173
Hostetter	171	145	157	Varenkamp	128	193	146
Mengel	142	119	161	Bordt	143	166	151
Fox		123	....				
Total	747	723	731	Total	726	808	757

CRISTOBAL.

The Interassociation bowling tournament began Saturday night with the Gatun second team at Cristobal; the score follows:

Gatun.				Cristobal			
Myers	181	154	175	Adams, D.	175	156	....
C.R.H'r'g'n.	149	156	187	Grover	136	135	136
Dalton	121	146	154	Blackburn	146	179	140
Wilson	137	149	152	Burns	190	156	181
Hodges	157	182	145	Claherty	151	130	....
				Barrett			203
				O'Meara			111
Total	745	787	813	Total	798	756	771

Cristobal played an exhibition game of basketball with the men from the U. S. S. *Tacoma* Saturday night and won by the score of 37 to 13. The following is the line-up of the teams:

U. S. S. Tacoma.	*Baskets thrown*	*Fouls thrown*	Cristobal.	*Baskets thrown*	*Fouls thrown*
Ford	4	3	Russell	11	3
Strohmann	1	......	Simms	4	2
Potter			Jaap	1	......
Kriskie			McSparren		
Owen			Martin		
Goetz			Schwal'n'g		
Cavvell					
Score		13	Score		37

A moving picture entertainment was given on Monday, September 12, and will be repeated on Monday, September 26.

The membership at Cristobal has passed the 400 mark. A large clock, marking the membership campaign, illuminated at night, has been installed in front of the clubhouse. It can be seen for some distance, both in the day time and at night.

Miss Gay Zenola McLaren read "The Man from Home" Friday night and will return on September 21 with the play "The Man of the Hour." Seats will be on sale for this entertainment Saturday, September 17.

The pool tournament has been decided with Wehmeier in first place, Louch second, and Thomas third.

The discussion club discussed "Leadership" this week led by Mr. Safford of Camp Elliott. Next week Mr. Kramer from Culebra will be here taking for his subject "Exercise."

The men from the U. S. S. *Tacoma* have been constant visitors at the clubhouse and are welcomed in all departments of the work.

GATUN.

The next meeting of the discussion club will be held on Friday night, September 16; subject, "What Shall We Read?"

The opening game in the Isthmian Bowling League was played on Saturday evening, September 10, on the Gatun alleys, when Gatun's first team took three games from Cristobal's first team, as follows:

Gatun First Team.				Cristobal First Team.			
Barte	179	181	181	Louch	149	130	149
C.A.H'r'g'n.	129	156	158	Collins	155	168	155
Ponton	162	160	177	Rabbitt	135	160	120
De Moll	126	187	128	Thomas	129	151	151
Durand	177	161	155	Bullard	135	140	168
Total	773	845	799	Total	703	749	743

The basketball game played on Saturday evening between Empire and Gatun at Gatun was fast and interesting; the score, 38 to 30 in favor of Empire.

The schedules for the bowling teams for September 17, will be Gatun's first team at Empire, and Empire's second team at Gatun.

Rainfall from September 1 to 10, Inclusive.

MIDNIGHT TO MIDNIGHT.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	1.09	4	2.48
Balboa	2.17	4	3.23
Miraflores	2.35	5	5.14
Pedro Miguel	2.36	4	3.92
Rio Grande	1.79	4	3.08
Central Section—			
Culebra	1.60	4	3.48
Camacho	1.18	4	3.86
Empire	1.62	9	3.39
Gamboa	2.37	4	5.42
Alhajuela	2.94	1	9.17
El Vigia	2.60	1	8.29
Gorgona	3.00	4	5.87
San Pablo	3.80	4	9.75
Tabernilla	6.19	4	11.46
Bohio	3.73	4	10.05
Monte Lirio	4.48	5	9.86
Atlantic Section—			
Gatun	2.71	4	7.09
Brazos Brook	3.43	5	5.41
Cristobal	1.55	5	4.78
*Porto Bello	1.48	4	4.23
Nombre de Dios	0.37	4	1.35

*To 5 p. m., September 9.

Misdirected Letters.

ANCON, C. Z., September 14, 1910.

The following insufficiently addressed letters originating in the United States and its possessions have been received in the office of the Director of Posts, and may be secured upon request of the addressee:

Albright, Mrs. Myron
Arthur, Robert
Bell, Milton A.
Best, Joseph
Birley, Mrs. Homer
Boggs, Julian C.
Brennan, Patrick
Brown, Capt. R. D.
Bryan, James
Caldwell, V. F.
Callahan, J. E.
Cameron, John
Carter, C.
Cecil, Mrs. H. E.
Chesbro, Claude L.
Chester, David
Dagley, Leo
Dahl, Chester
Davis, M. H.
Dempster, Tom C.
Deyo, Harold
Disk, S. B.
Dixon, A. B.
Dougherty, James
Downs, Mrs. John R.
Doyle, A. (2nd class)
Ellis, J. W.
Englesberg, I.
Ernst, Louis
Falkner, W. H.
Fenton, W. F.
Fortney, Harry L.
Gerchaw, F.
Goodman, Morris
Grant, J. H. Rose
Gray, John (2nd class)
Grout, Mrs. F. E.
Hall, J. T.
Hartley, Miss Ruth T.
Hays, Mrs. Eula L.
Hearns, Michael
Hodge, Miss Mattie
Howard, E. L.
Howe, C. H. R.
Hummer, Mrs. C. D.
Hurley, Hilary
James, Arthur
Jefferies, Mrs. P. M.
Jones, C. G.
Kaufman, Julius E.
Kelley, Mrs. Mart
Kotalik, J. J.
Kunce, O. H.
Larson, James (2)
Lassa, Eladia
Little, Mrs. Antoinette
Major, Mrs. Eva M. C.
Marsh, Lester
McConnoughly, Mrs. J. S.
Mead, Homer
Mollenhauser, Arnold
Morrison, Roderick G.
Naylor, Mrs. Chas.
Nelms, Marshall B.
Nicholson, E. P.
Olsen, John
Peak, Frank
Pedrache, Leon Y. (4th class)
Panizar, T. L.
Patson, Harris V.
Rogers, Wm.
Ryan, Michiel
St. Clair, Mrs. Dan
Schwable, Frank J.
Seales, Mrs. F. (4th class)
Sherry, Hugh
Short, W. G.
Smith, Lewis A.
Smith, Frank J.
Van Camp, Rob (2)
Vernon, Frank
Ward, Raymond
White, Mrs. E. C.
Whitwood, L.
Wilson, Rube
Wise, Will
Wolfschoon, Edward
Wright, Miss Manid
Yeoman, Chas.

COMMISSARY DEPARTMENT.

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning September 13:

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	7
Shoulder, neck trimmed off, (4 lbs. and over), per pound	10
Entire forequarters (not trimmed) 10 pounds and over, per pound	9
Legs, (8 to 10 pounds), per pound	19
Cutlets, per pound	20
Short cut chops, per pound	22
Lamb—Stewing, per pound	7
Entire forequarters, neck trimmed off, per pound	10
Legs (5 to 8 pounds), per pound	24
Chops, per pound	26
Cutlets per pound	26
Veal—Stewing, per pound	10
Shoulder for roasting (not under 4 pounds), per pound	15
Loin for roasting, per pound	19
Chops, per pound	22
Cutlets, per pound	26
Pork cuts, per pound	22
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	9
Corned, per pound	12, 14, 16
Chuck roast, (3 pounds and over), per pound	13
Pot roast, per pound	15
Rib-roast, second cut (not under 3½ pounds), per pound	18
Rib roast, first cut (not under 3 pounds), per pound	20
Sirloin roast, per pound	21
Rump roast, per pound	21
Porterhouse roast, per pound	21
Steak, Chuck, per pound	14
Round, per pound	15
Rib, per pound	20
Sirloin, per pound	21
Porterhouse, per pound	21
Rump, per pound	21
Tenderloin, per pound	24

MISCELLANEOUS.

Livers—Beef, per pound	10
Calf, each	60
Half, each	30
Sausage—Pork, per pound	17
Bologna, per pound	14
Frankfurter, per pound	14
Leberwurst, per pound	14
Sweet bread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	†31
Eggs, fresh, ½ dozen only	†17

POULTRY AND GAME.

Chickens—Fancy Roasting, large, each	1.50
medium, each	1.30
Fowls, each	70, 82, 93, 1.04, 1.15
Ducks, large, each	1.50
medium, each	1.30
Broilers, each	75
Turkeys, per pound	30
Squahs, each	35
Capons, each	2.50
Pheasants, each	70, 1.00
Partridges, each	50
Grouse, each	85

CURED AND PICKLED MEATS.

Ham—English York Cut, per pound	30
German, Westphalia, per pound	36
Sugar cured, per pound	24
Sugar cured, sliced, per pound	27
Half, for boiling, per pound	25
Boiled, per pound	32
Hocks, per pound	‡8
Bacon—Breakfast, whole piece, per pound	30
Breakfast, sliced, per pound	31
Beef, salt, family, per pound	12
Pork, salt, family, per pound	*16
Ox tongues, each	80
Pigs' feet, per pound	10
tongues, per pound	16
Mutton, mess, per pound	7

DAIRY PRODUCTS.

Butter—Creamery special, per pound	40
Cheese—Roquefort, per pound	38
Philadelphia Cream, cake	10
Young America, per pound	22
Swiss, per pound	26
Edam, each	1.00
Neufchatel, each	6
Gouda, per pound	34
Parmesan, per pound	35
Milk, Briarcliff, bottle	**25
Buttermilk, bottle	**15

VEGETABLES AND FRUITS.

	Price.
Beets, per pound	3½
Celery, per head	6
Carrots, per pound	3½
Cabbage, per pound	3½
Cucumbers, per pound	5
Lettuce, per head	5, 7, 10
Onions, per pound	3½
Potatoes, white, per pound	3½
sweet, per pound	2½
Rhubarb, per pound	6
Squash, per pound	4
Tomatoes, per pound	8
Turnips, per pound	3
Yams, per pound	3½
Apples, per pound	*5
Canteloupes, each	08
Grapes, per pound	*8
Huckleberries, per quart,	20
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12
Peaches, per pound	10
Pears, per pound	10
Plums, per pound	10
Watermelons, each	†40

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*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from Commissaries; no orders taken for delivery.

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal and Colon during theweek ending September 10, 1910:

Advance, September 5, from New York, with 51 cases rubber boots for Atlantic Division; 12 crates concrete machinery for Pacific Division; 14 cases drugs, etc., for Sanitary Department; 705 bags bran for Ancon dairy; 14 cases enamel ware, 200 cases washing powder, 1,000 pieces steel bars, 50 pieces switches, 40 cases lanterns, 36 barrels iron pipe-fittings, 10 cases copper tubing, 25 coils drill hose for stock; and a miscellaneous cargo, the whole consisting of 2,296 packages, weighing 186 tons.

Atenas, September 8, from New Orleans, with 405 tons dump car parts for Cristobal shops (for erection); 1,250 crates fire brick, 10 cases valves, 648 bales hay, 2,601 pieces yellow pine car stakes for stock.

Santa Marta, September 9, from New York, with 84 tons lock construction material for Atlantic and Pacific Divisions; 13 cases electrical material, 7 barrels electrical material 18 packages car parts for Atlantic Division; 13 cases electrical material for Mechanical Division; 171 crates wooden handles, 119 bundles wooden handles for stock.

Panama, September 9, from New York, with 12 iron brackets for Atlantic Division; 148 pieces maple lumber, 27 cases iron bolts, 120 tons castings, 392 kegs rivets for Mechanical Division; 80 cases bolts and nuts, 34 barrels rosin, 40 cases headlights, 14 cases paint composition, 159 cases insect exterminator for stock; and a miscellaneous cargo, the whole consisting of 3,239 packages, weighing 508 tons.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending September 21 1910, (75th meridian time):

Date.	High.	Low.	High.	Low.
	A. M.	A. M.	P. M.	P. M.
September 15	12.07	6.28	12.30	7.00
September 16	1.14	7.30	1.33	7.54
September 17	2.07	8.20	2.26	8.42
September 18	2.52	9.07	3.12	9.26
September 19	3.35	9.50	3.55	10.10
September 20	4.15	10.32	4.36	10.50
September 21	4.55	11.13	5.17	11.32

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, September 10, 1910. All heights are in feet above mean sea level.

DAY AND DATE	STATION.				
	Vigia	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun. Sept. 4	130.6	96.3	50.3	21.0	18.4
Mon. Sept. 5	130.7	96.4	51.8	21.6	19.5
Tues. Sept. 6	128.7	95.0	49.6	20.2	19.4
Wed. Sept. 7	131.1	96.5	49.8	19.5	19.0
Thurs. Sept. 8	130.9	96.3	50.2	19.2	18.5
Fri. Sept. 9	136.9	100.2	54.2	20.0	18.5
Sat. Sept. 10	131.3	97.6	54.3	21.4	19.2
Height of low water	125.0	92.0	46.0		

LOST—Gold cuff button, initials "A. J. C." Reward if returned to room 4, house 88, Gorgona.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company, of the Royal Mail Steam Packet Company, of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Ancon	P. R. R.	Saturday	Sept. 10
Allianca	P. R. R.	Saturday	Sept. 10
Colon	P. R. R.	Saturday	Sept. 17
Advance	P. R. R.	Friday	Sept. 23
Panama	P. R. R.	Thursday	Sept. 29
Allianca	P. R. R.	Wednesday	Oct. 5
Colon	P. R. R.	Tuesday	Oct. 11
Advance	P. R. R.	Monday	Oct. 17
Panama	P. R. R.	Saturday	Oct. 22
Allianca	P. R. R.	Friday	Oct. 28
Colon	P. R. R,	Friday	Nov. 4
Advance	P. R. R.	Thursday	Nov. 10

CRISTOBAL TO NEW YORK.

Panama	P. R. R.	Friday	Sept. 16
Allianca	P. R. R.	Thursday	Sept. 22
Colon	P. R. R.	Thursday	Sept. 29
Advance	P. R. R.	Wednesday	Oct. 5
Panama	P. R. R.	Tuesday	Oct. 11
Allianca	P. R. R.	Monday	Oct. 17
Colon	P. R. R.	Sunday	Oct. 23
Advance	P. R. R.	Saturday	Oct. 29
Panama	P. R. R.	Friday	Nov. 4
Allianca	P. R. R.	Thursday	Nov. 10

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 4th and 25th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Metapan	U. F. C.	Thursday	Sept. 8
Prinz Joachim	H.-A.	Saturday	Sept. 10
Zacapa	U. F. C.	Thursday	Sept. 15
Clyde	R.-M.	Saturday	Sept. 17
Almirante	U. F. C.	Thursday	Sept. 22
Prinz Aug. Wilhelm	H.-A.	Saturday	Sept. 24
Santa Marta	U. F. C.	Thursday	Sept. 29
Atrato	R.-M.	Saturday	Oct. 1
Metapan	U. F. C.	Thursday	Oct. 6
Prinz Joachim	H.-A.	Saturday	Oct. 8
Zacapa	U. F. C.	Thursday	Oct. 13
Tagus	R.-M.	Saturday	Oct. 15
Almirante	U. F. C.	Thursday	Oct. 20
Prinz Aug. Wilhelm	H.-A.	Saturday	Oct. 22

COLON TO NEW YORK.

Santa Marta	U. F. C.	Friday	Sept. 16
Atrato	R.-M.	Wednesday	Sept. 21
Metapan	U. F. C.	Friday	Sept. 23
Prinz Joachim	H.-A.	Tuesday	Sept. 27
Zacapa	U. F. C.	Friday	Sept. 30
Tagus	R.-M.	Monday	Oct. 3
Almirante	U. F. C.	Friday	Oct. 7
Prinz Aug. Wilhelm	H.-A.	Tuesday	Oct. 11
Santa Marta	U. F. C.	Friday	Oct. 14
Oruba	R.-M.	Monday	Oct. 17
Metapan	U. F. C.	Friday	Oct. 21

NEW ORLEANS TO COLON.

Turrialba	U. F. C.	Saturday	Sept. 10
Abangarez	U. F. C.	Saturday	Sept. 17
Atenas	U. F. C.	Saturday	Sept. 24
Turrialba	U. F. C.	Saturday	Oct. 1
Abangarez	U. F. C.	Saturday	Oct. 8
Atenas	U. F. C.	Saturday	Oct. 15

COLON TO NEW ORLEANS.

Atenas	U. F. C.	Thursday	Sept. 15
Turrialba	U. F. C.	Thursday	Sept. 22
Abangarez	U. F. C.	Thursday	Sept. 29
Atenas	U. F. C.	Thursday	Oct. 6
Abangarez	U. F. C.	Thursday	Oct. 13
Atenas	U. F. C.	Thursday	Oct. 20

COLON TO BARBADOS, CALLING AT TRINIDAD.

Clyde	R.-M.	Tuesday	Sept. 27
Atrato	R.-M.	Tuesday	Oct. 11

The next sailing of the Leyland Line will be as follows: *Barbadian*, on or about September 23, for New Orleans, via Kingston, Ja.

Hamburg-American steamers leave for New York at 10 a. m., and for Port Limon every Tuesday or Wednesday.

Royal Mail steamers leave for New York on alternate Wednesdays at 10 a. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans leave on Thursday at 3 p. m., and for New York on Friday at 10 a. m.

Sailings of the French Line (Cie Generale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3d and 20th of each month.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, SEPTEMBER 21, 1910. No. 4.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Chairman's Monthly Report.

The report of the Chairman of the Isthmian Canal Commission for the month of August is published in full in other columns of this issue of THE CANAL RECORD. It gives a detailed account of the progress of Canal work in all departments and divisions.

Cucuracha Slide Again Active.

The mass of rock and earth that is sliding gradually but surely into Culebra Cut from the east bank of the Canal at Cucuracha received a new impetus on the night of September 16, and when the men went to work on the morning of the 17th all the railroad tracks on the east side of the drainage ditch had been covered or pushed out of place, and the material had filled the ditch itself and covered one track on the west side. On the following day one track had been opened on the east side of the center line and all west side tracks were in operation. The inconvenience caused by the new movement will continue for ten days or more.

No new material broke from the bank; the movement was merely that of the old slide, estimated as containing 500,000 cubic yards, described in THE CANAL RECORD of May 25. A steam shovel had been excavating at the toe of the slope several days prior to the movement and had removed earth and rock in sufficient quantity to give the slide a new start. The policy in regard to these slides is to continue excavating them as they move into the Canal, and steam shovels are constantly at work to that end. The amount of material in motion at Cucuracha is nearly one-half the total excavation in Culebra Cut in August, and represents a little more than one-half of one per cent of the total excavation in Culebra Cut.

River Diversion.

The plan of diverting the water from the Rio Grande and the Cardenas River into the Canal at Station 2100, a point near the Agua Dulce pumping station, opposite Corozal, has been approved, and the change will probably be made when the Canal is completed below Miraflores Locks. At present, the flow from these streams is carried off by the Rio Grande diversion, which parallels the Canal from Miraflores to a point between Corozal and Balboa, where the water wastes into the swamps inundated by the tides. The principal purpose to be served in changing the diversion is to remove the point of discharge outside the area of the proposed terminal harbor operations at Balboa.

Steam Shovel Record in Culebra District.

On September 15th, 16 shovels of the 200-class, working in the Culebra construction district of the Central Division, excavated 27,797 cubic yards in an 8-hour day, an average of 1,737 cubic yards for every shovel in the district on the date in question. During this period, the shovels were under steam 128 hours; were actually at work 100 hours and 10 minutes; were waiting for cars 25 hours and 10 minutes, the rest of the time being lost in moving back, repairing shovels, cleaning track, mining, etc.

Disposing of Wet Clay Excavation.

Excavation in the Chagres section of the Central Division is almost entirely confined to earth, and much of the material is clay. Wasting material on a clay dump is expensive during the wet season, because under pressure it slides from under the tracks. Throwing the tracks is also difficult. Three plans have been adopted to dispose of the spoil economically, and all are possible because of the proximity of the excavation to the Chagres River, which carries the clay down stream.

At Gorgona, a high trestle has been built on the bank of the river back of the shops and the spoil is dumped from this trestle along the edge of the stream. Water drawn from the river is turned on it through hose and the clay is thus sluiced into the stream or wetted sufficiently to make it move slowly into the current from its own weight. The pumps for this dump have been run by compressed air, but an old French locomotive has been installed and steam will be used henceforth. The pump discharges through a 6-inch main laid along the bank beneath the trestle, from which at regular intervals there are branches to which the sluicing hose may be attached.

At San Pablo and Juan Grande, the method of wetting the clay so that it will slide out into the stream is used. The dumping trestles are built at points where the current in the river is especially strong, so that the clay, when it strikes the stream, is carried rapidly away.

At East Mamei, a low trestle has been built out into the stream, and the plan of cleaning the spoil away from this trestle by sluicing is being tried. This is in the experimental stage and it is not believed it will be so economical as the two plans outlined above, unless the portable sluicing plant can be used at several dumps. The portable sluicing plant is erected on two standard flat cars, and is shifted from place to place by a locomotive which also furnishes steam to run the pumps. On one car are mounted two pumps 14 by 10 by 8 inches, and a boom by which the suction pipe is let into the river. These pumps are old stock and, being of the reciprocating type, cannot handle muddy water so advantageously as centrifugal pumps. From the pumps the water is forced through a pipe to a second car on which the sluicing monitors are mounted. A 3-inch nozzle directed over the end of the car can throw a stream directly down and on either side. A 2½-inch nozzle carried over each side by a flexible hose can throw a stream in any direction, even so as to wash out under the car itself. A third 2½-inch nozzle is used to wash out the dump cars.

Pedro Miguel-Miraflores Highway.

The laying of a spur track from the Panama railroad relocation, for use as a dump track in connection with the building of the highway between Pedro Miguel and Miraflores, has been begun. The construction of a section of this road involves the crossing of the valleys of the Caimitillo and Camaron Rivers, near Miraflores. It is proposed to construct a trestle across these two valleys, extend the construction track along it, and make the fills with spoil from the Canal prism. The material will be supplied by the Central Division, but the dirt trains, which will have to be run over the relocated line from Paraiso, will be handled by the Panama railroad.

The section of the trestle over the Caimitillo River valley will be about 500 feet long, and that over the Camaron River valley, between 250 and 300 feet. The height of the embankment will be about 60 feet above sea level, and its width across the top will be either 16 or 24 feet. If the width is fixed at 16 feet, guard rails will probably be erected along the sides for protection. The culverts, through which the water from the streams will be diverted, will consist of old French iron pipe, nine feet in diameter. Two lines of this pipe, running parallel, will be placed at the Caimitillo River crossing, and one at the Camaron River, which is a small stream emptying into the Caimitillo. In order to procure a solid bed for these culverts, they will be located on natural benches at one side of the streams, about 20 feet above the present channels, and a special fill will be made around them. This will cause the water to back up into the valleys for some distance, and possibly may necessitate the removal of a few native houses from the area that will be submerged.

From the Pedro Miguel station to the river valleys the land is favorable for road building, and this section is now under construction with prison labor. South of the Caimitillo River, the road passes through a cut in the hill east of the railroad tunnel, which is already finished. From this point it will continue over the Miraflores dumps to the

NOTES OF PROGRESS.

(Continued.)

crossing of the Cardenas River, but no work can be done on this stretch until the Central Division abandons these dumps. South of the Cardenas River, the road is completed into Corozal, and thence into Panama.

Testing the Hydraulic Plant.

The new hydraulic plant of the Pacific Division is in partial operation, but the work so far has been principally in the nature of tests. The dredging pump on one of the barges has been excavating a sump in which the barge can settle down, the material being forced through the pipe into the core of the west dam at Miraflores. One of the monitors has also been in service washing down the bank at this point. The dredging equipment on the second barge is nearly ready for duty.

Concrete in Gatun Locks.

The placing of concrete in Gatun Locks is advancing in the upper or lake-level locks, and in the east side wall, center wall and floor of the middle locks. A statement of the concrete laid during the week ending September 17, and of the total to that date, follows:

Date.	Concrete placed.	Large stone.	Hours worked.	No. of mixers	Total.
Sept. 12	2,980	365	92:00	8	3,345
Sept. 13	2,894	311½	89:00	10	3,205½
Sept. 14	2,790	357½	102:40	10	3,147½
Sept. 15	3,026	357½	87:00	8	3,383½
Sept. 16	2,512	349¼	80:30	8	2,861¼
Sept. 17	2,530	274	92:00	8	2,804
Total..	16,732	2,014¾	543:10	......	18,746¾
Previously reported	....	....	....	......	708,666½
Grand total.	....	....	....	......	727,413¼

The construction plant at Gatun was shut down from 12.25 to 2.15 o'clock on the afternoon of September 16, on account of a lack of water due to a break in the water main.

Concrete Work in Gatun Spillway.

The amount of concrete placed in the Spillway of Gatun Dam in the week ending September 17, with the total placed to that date, is shown in the following statement:

Date.	Cubic Yards.		
	Concrete	Large rock.	Total.
September 12...........	162	8	170
September 13...........	186	....	186
September 14...........	190	10	200
September 15...........	124	12	136
September 16...........	188	12	200
September 17...........	204	18	222
Total................	1,054	60	1,114
Previously reported...	....	....	91,876
Grand total.........	....	....	92,990

New P. R. R. Time Table.

Time table No. 7, which appears on another page of this issue of THE CANAL RECORD, goes into effect on the Panama railroad on Sunday, September 25. The cutting off of the stops at Lion Hill and Ahorca Lagarto, and the use of the new line between Paraiso Junction and Corozal Junction has enabled a shortening of the schedule in the case of the weekday trains, Nos. 2, 4, 5, 6 and 7. No change is made, however, in the time of trains Nos. 3 and 5, or of any of the Sunday trains.

Train No. 2 leaving Panama at 6.30 a.m. will be due to arrive in Colon at 8.45, twenty minutes earlier than usual. Train No. 4 leaving Panama at 10.45 a.m., is due at Colon at 1 p.m., instead of 1.15. Train No. 5 leaving Colon at 10.30 a.m., is scheduled to reach Panama at 12.45 p.m., instead of 1 o'clock, as at present. Train No. 6 leaving Panama at 1.30 p.m., will be due in Colon at 3.45, five minutes earlier. Train No. 7 leaving Colon at 4.35 p.m., will reach Panama at 6.50 p.m., shortening the time by 10 minutes.

New Gatun has been added to the list of stations and a new depot for that point has just been completed. The regular daily passenger trains will not stop there, but provision has been made for running a shuttle train five times each way daily, except Sunday, when two of the south bound trains, one leaving Colon at 10 a. m., and the other at 7 p. m. will stop on flag. The time of the shuttle train has been made a part of the regular train schedule.

Pedro Miguel Concrete Laying.

A statement of the concrete laid in the locks at Pedro Miguel for the six 8-hour working days of the week ending September 17, and the total to that date, follows:

Date	Concrete placed.	Large stone.	Hours worked.	No. of mixers	Total.
Sept. 12..	1,960	17	24:50	4	1,977
Sept. 13..	1,966	3	25:00	4	1,969
Sept. 14..	1,858	19	24:25	4	1,877
Sept. 15..	2,080	12	28:42	4	2,092
Sept. 16..	1,988	5	28:00	4	1,993
Sept. 17..	1,936	62	28:00	4	1,998
Total...	11,788	118	158:17	4	11,906
Previously reported	....	3,050	....	......	277,909
Grand total.	....	3,168	....	......	289,815

Concrete Work at Miraflores.

A statement of the concrete laid in the locks at Miraflores for the six 8-hour working days of the week ending September 17, and the total to that date, follows:

Date	Auxiliary Plant.				
	½-Cubic yard mixers.	⅓-Cubic yard mixer.	2-Cubic yard mixers.	Large stone.	Total.
Sept. 12	202	26	410	20	658
Sept. 13	277	43	408	8	736
Sept. 14	387	58	388	10	843
Sept. 15	251	63	420	......	734
Sept. 16	413	68	408	12	901
Sept. 17	397	32	328	15	772
Total..	1,927	290	2,362	65	4,644
Previously reported	....	....	....	344	15,454
Grand total..	....	....	....	409	20,098

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the week ending September 17, follows:

Date.	Hours worked.	Cubic Yards.
September 12..................	5:55	2,604
September 13..................	12:53	2,279
September 14..................	4:31	1,137
September 15..................	6:27	2,969
September 16..................	10:06	3,388
September 17..................	11:08	3,267
Total......................	51:00	15,644

Sailing of the Ancon.

The steamship *Ancon* will sail from dock No. 11, Cristobal, on Monday, September 26, at 3 p. m.

LOST—A Kappa Alpha Theta fraternity pin, inscribed "Camilla Stewart, April, 1909, A. Z." Return to Paymaster, Ancon.

OPENING OF SCHOOL.

Children Entitled to Free Tuition—Assignment of Teachers.

The public schools of the Canal Zone will open on Monday, October 3, at 9 a. m.

All children of the Canal Zone, whether of employes or nonemployes, and all nonresident children of employes of the Isthmian Canal Commission are entitled to free school privileges. Patrons desiring railroad passes for their children should apply at this office immediately.

For further particulars call on, or address

FRANK A. GAUSE,
Superintendent of Schools.

Ancon, C. Z., September 13, 1910.

Teachers of the Canal Zone schools are assigned as follows for the school year beginning October 3, 1910:

Ancon—Miss Jessie E. Daniels, principal; Miss Emma Cobban, Miss Clara L. Voyles, Miss Georgia T. Munroe, Miss Mildred O. Bates, Miss Jessie S. Wilson.

Pedro Miguel—Mrs. Gertrude Hoffman, principal; Miss Florence A. Schofield.

Paraiso—Unassigned.

Culebra—Mrs. Mamie Miracle, principal; Miss Lina Tozer, Mrs. Cornelia H. Ellsworth.

Empire—Mrs. Jesse J. White, principal; Miss Alberta Hawley, Miss Mary M. Shea, Miss Helen Daniels, Miss Grace Yarborough.

Gorgona—Miss Annie Irvin, principal; Miss Marion Patterson, Miss Elise Cage; unassigned.

Tabernilla—Miss Jessie Pontius.

Gatun—Carl C. Carr, principal; Miss Ida Boles, Miss Jennie Bogner, E. D. Christopherson; Miss Ena Robb, Miss Hattie Hawley, Miss Elise Stone, Miss Wenonah Whiting.

Cristobal—Miss Odina J. L. Frost, principal; Miss Edith Anderson, Miss Natalie Hine, Miss Edith McIntyre, Miss Jean McGill.

Substitutes—Miss Ida Keys, Miss Grace McCray.

As stated in the manual, all assignments are subject to change when the good of the service requires.

Panama Canal Service Medal Association.

THE CANAL RECORD:

A general meeting of the above association will be held at the hall over the I. C. C. hotel at Gorgona on Sunday, September 25, at 2.15 p. m., for the discussion of matters pertaining to the welfare of the association.

All members and persons entitled to become members are cordially invited to attend. Attention is again called to the fact that the charter membership period closes on October 1, after which an initiation fee of $5 will be collected.

E. F. J. GOLDSMITH, *Secretary.*
P. O. Box 115, Ancon, C. Z.

Ancon, September 19, 1910.

Missing Man.

The American Legation in Panama is in receipt of a letter from Mrs. John Donnley, of 89 Fitzgerald street, Buffalo, N. Y., requesting information as to the whereabouts of her son, John Donnley, who has been away from home eight years. According to the last information to his mother, he was employed by the Isthmian Canal Commission. His mother states that she is old and feeble, and requests that her son write to her.

CHANGES IN SHOPS.

Increase of Work at Gorgona—Cocoli Shop of the Pacific Division Closed.

The effect of Circular No. 343 published in THE CANAL RECORD of August 31, and of Circular No. 349 published on September 7, is to concentrate all manufacture of material for mechanical equipment in the shops of the Mechanical Division at Gorgona and Pedro Miguel. The concentration is made in the interest of economy during the construction of the Canal, and is only temporary, because the water of Gatun Lake will cover the site of Gorgona shops by January, 1914, and the shops at that place will therefore be abandoned before that time. The site for a central machine shop, to be used after the completion of the Canal in making repairs to marine and railroad equipment and to lock operating machinery, will be determined later. Cocoli shop at Miraflores Locks has been closed, but field repair shops will not be abandoned. Steam shovel repairs will continue at Empire shop, as heretofore, and repairs to marine equipment will be made at the Mount Hope and Balboa shops.

The work done at Cocoli shop has been the hostling of locomotives, and light running repairing to Pacific Division equipment in use at Pedro Miguel and Miraflores Locks. The transfer of this work to Pedro Miguel will not necessitate the employment of additional foremen at Pedro Miguel, and it will effect an appreciable saving in the cost of superintendence, because it will make possible the abolition of the Cocoli shop positions of master mechanic, shop foreman, carpenter foreman, and car repair foreman. It is believed that it will also effect a saving in cost of labor, power, lighting, maintenance, and transportation of employes to and from Cocoli. No machinery will be taken out of the Cocoli shop, however, until it is certain that the new plan is more economical. The changes outlined in Circular No. 349, do not involve the abandoning of steam shovel repairs in the field at Miraflores and Pedro Miguel, nor closing the small repair shop at Ancon quarry.

Gray iron castings to the amount of 607,725 pounds were made at Gorgona foundry in August, the largest output for one month since the foundry was opened. The castings included all kinds of work, but the largest orders were caisson seats, culvert liners, and semi-steel washers for anchorage bolts for the locks, and propellers for marine equipment. In the brass foundry also, all records for output were broken in August, the total weight of the castings being 64,691 pounds.

The concentration of mechanical work has already begun to affect the output of Gorgona shops and foundry. In the first ten days of September, 300 manufacturing orders were received. The force has been increased about ten per cent, the number now being 846 white men, including skilled artisans and administrative force, and 1,320 laborers of all kinds, a total of 2,166. Since the first of the month, a night force of 200 men has been kept at work in the machine shop, blacksmith, boiler, and erecting shops, and by this arrangement it is possible to work 16 hours a day on important rush orders without working any artisans overtime.

Death of Col. J. R. Shaler.

Col. James R. Shaler, formerly General Superintendent of the Panama railroad, died at the home of his brother in Ocean City, N. J., on September 7, in the eightieth year of his age. He was appointed Superintendent on the Isthmus in November, 1895, was promoted to General Superintendent in 1898, and left the service in May, 1904. During this period he was in direct charge of all the company's interests on the Isthmus, both railroad and steamship.

Request for Special Trains.

As requests for permission to run Commission equipment over the main line of the Panama railroad are occasionally submitted to the office of the Chairman in incomplete form or too late for action, the following circular is republished for the information of all concerned:

CULEBRA, C. Z., October 9, 1909.

CIRCULAR No. 286:

Employes will hereafter be governed by the following regulations in submitting requests for permission to run Commission equipment over the main line of the Panama railroad:

Requests for permission to run Commission equipment over the main line of the Panama railroad must be submitted in writing to the office of the Chairman at least three days prior to the date on which the train is desired. This is necessary in order to allow sufficient time for forwarding the request to the Panama railroad and receiving reply as to whether it is practicable to grant the permission for the date specified.

Requests should state:

Whether permission has been secured for the use of Commission equipment.

Whether a qualified crew will man the train.

The points between which the train is to be run.

Time of leaving and arriving at terminals, and intermediate points at which train will stop, in order that the despatcher of the Panama railroad may arrange a schedule accordingly.

In all cases qualified crews must be used, and train equipped with flags, markers, torpedoes and fusees.

H. F. HODGES,
Acting Chairman, Isthmian Canal Commission.
Second Vice-President, Panama Railroad Company.

Pistol Championship Matches.

As announced in THE CANAL RECORD of August 17, matches A and B are open only to residents of the Canal Zone, while match P is open to residents of the Republic of Panama also.

Matches A and B will be shot September 18 to 25, inclusive, as annnounced, but match P is extended so that entries may be received if postmarked not later than September 28. Entries should be sent to T. E. L. Lipsey, acting governor, official representative of the U. S. R. A. during the absence of L. D. Cornish, and with them should be enclosed the entrance fee (see below), and it should be stated on what date and at what time contestant desires to shoot.

Match P for the championship of Panama to be shot on any day between October 1 and 8, inclusive, will be shot under the same rules as match A; 50 shots at 50 yards on the standard American target, 8-inch bullseye, 10-ring, 3.36 inches; arm, any revolver within the rules; ammunition, any; the score must be completed within one hour from the time of firing the first shot. No reentries.

Prizes: First—A Colt, 38 cal. New Army revolver, value, $25 U. S. C., which will be given to the winner, has been offered by a Panama hardware company. It will be suitably inscribed if the winner so wishes.

Second—A silver medal suitably inscribed.

Third—A bronze medal suitably inscribed.

The entrance fee has been reduced to $1.50 U. S. currency, and it is hoped that a large number of entries will be received.

The rules referred to above state that the revolver may be of any calibre, with a maximum length of barrel, including cylinder, of 10 inches. Minimum trigger pull 2½ pounds, to be measured just prior to firing, with the barrel held vertically and the pull exerted ⅜ of an inch from the tip of trigger. Sights may be adjustable, but must be strictly open, in front of the hammer and not over 10 inches apart. The position of the contestant shall be standing, free from any support, the revolver being held in one hand with arm extended to be free from body. A new target is supplied for each string of 10 shots and cost is covered by entrance fee. Cost of medals and inscription will be defrayed from balance of entrance fees. Further printed information will be on hand at the range, near the Culebra incinerator.

Fatal Accident on Gatun Labor Train.

John J. Coit, a white American, was killed, and a West Indian negro was seriously injured in an accident to the Gatun-Culebra labor train, near Mamei, on the morning of September 21. About 200 feet from Bridge 47 on the main line of the Panama railroad, engine No. 500, hauling the labor train, ran into a cow. The locomotive left the track and turned over on the south bound main line track. The engineer, John J. Coit, was killed instantly, and the negro fireman sustained serious injuries. The south bound track was clear by 8.45 o'clock in the forenoon.

John J. Coit was 35 years of age, a resident of Los Angeles, Cal., and had been on the Isthmus since July, 1908. He was a locomotive engineer in the employ of the Atlantic Division, and his residence in the Canal Zone was at Culebra. He was unmarried. A sister, Mrs. C. J. Stanton, 418 Solano avenue, Los Angeles, Cal., survives him.

Canal Zone Rifle Club.

THE CANAL RECORD:

All persons interested in military rifle shooting and desirous of becoming members of the Canal Zone Rifle Club, are requested to correspond with the Secretary, Pedro Miguel, C. Z. This club is affiliated with the National Rifle Association of America and purchases its arms and ammunition from the Government. The club holds four shoots annually for members to qualify as marksmen, sharpshooters and experts, as provided for under the rules and regulations of the National Rifle Association. Lapel buttons are furnished members by the association, showing the class in which they qualify. An order for arms and ammunition will be placed in the near future, so send for an application blank for membership as soon as possible.

H. L. BRIDGES, *Secretary.*

Pedro Miguel, September 18, 1910.

Masonic Temple in Colon.

The Panama Railroad Company has been authorized to lease to Sojourners Lodge, No. 874, F. and A. M. of Colon, the lots in that city bounded on the east by Bolivar street, on the north by 11th street, and on the west by Bottle alley, to be used as a site for a Masonic temple. Tentative plans for the building provide for a fireproof structure of concrete, 120 feet long, 90 feet wide, three stories high, at a cost of about $50,000.

Culebra Cut construction trains, running into the Cut north of the summit, began using the incline at Whitehouse on September 16, after several months during which the tracks were not considered safe. A pocket of earth and rock had given way in the incline and it was necessary to dump hundreds of carloads of rock before a stable roadbed could be procured.

CANAL WORK IN AUGUST.

Monthly Report of the Chairman to the Secretary of War.

CULEBRA, C. Z., September 15, 1910.

The Honorable the Secretary of War,
Washington, D. C.

Sir: I have the honor to submit the following report of operations on the Isthmus for the month of August, 1910:

Department of Construction and Engineering.

The following table summarizes the principal items of construction work accomplished by the Atlantic, Central and Pacific Divisions during the month:

Item.	Unit.	Atlantic.	Central.	Pacific.	Total.
Work excavation, dry	Cubic yards	99,737	1,612,118	30,337	1,742,192
Work excavation, wet	Cubic yards	508,829	....	506,969	1,015,798
Total work excavation	Cubic yards	608,566	1,612,118	537,306	2,757,990
Plant excavation, dry	Cubic yards	32,602	278	....	32,880
Plant excavation, wet	Cubic yards	4,592	....	18,000	22,592
Total plant excavation	Cubic yards	37,194	278	18,000	55,472
Total Canal excavation	Cubic yards	645,760	1,612,396	555,306	2,813,462
Material placed in dams	Cubic yards	641,616	....	10,898	652,514
Concrete laid	Cubic yards	89,259	....	57,294	146,553
Explosives used	Tons (Gross)	97.02	191.30	27.82	316.14
Rock drilling	Feet	96,122	394,916	34,371	525,409
Track removed	Miles	....	9.60	....	9.60
New tracks laid	Miles	3.62	16.92	2.54	23.08
Rock crushed	Cubic yards	74,925	279	61,092	136,296
Cement used	Barrels	87,046	90	59,409	146,545
New roads built	Miles	....	....	....	....
Water mains laid	Feet	14,392	2,121	751	17,264
Sewers laid	Feet	....	258	1,714	1,972
New drains and ditches dug	Feet	....	362	450	812
Average daily force	....	8,541	9,448	4,006	21,995
Average rainfall	Inches	16.13	10.08	10.95	11.61

Atlantic Division.

GATUN LOCKS.

Concrete Work—The concrete work for August showed an increase of 1,685 cubic yards over the output for July. The bucket measurement exceeded the place measurement by 52½ cubic yards. The total amount of concrete placed was 85,686 cubic yards, of which 73,105.5 cubic yards were laid in the upper lock, and 12,580.5 cubic yards in the middle lock. The total amount of concrete placed to September 1, 1910, was 683,251.5 cubic yards, of which 652,513.5 cubic yards were laid in the upper lock, and 30,738 cubic yards in the middle lock. The concrete work was 33.4 per cent completed.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS.

	Permanent Plant.	Auxiliary Plant.
Average number of bours per day worked, per strand of cableway or per derrick, laying concrete and large stone (actual working time)	9.20	7.55
Average number of mixers per day	6.00	2.00
	Cu. Yds.	*Cu. Yds.*
Average hourly output per mixer (actual working time)	28.01	50.00
Average amount of concrete and large stone laid per hour per strand of cableway or per derrick (actual working time)	27.93	....
	Cu. Yds.	*Cu. Yds.*
Large rock laid	5,234.5	2,817
Concrete laid	54,964.0	22,723
Total	60,198.5	25,540

Excavation—Shovel excavation during the month was carried on in the lower chamber only, 89,146 cubic yards of material being removed, increasing the total to 5,212,896 cubic yards. The excavation, including excavation for the approach walls, was 90 per cent completed, and the culvert excavation in the middle chamber was 85 per cent completed.

Receiving and Issuing Material—The receipts of material during the month were satisfactory, except in the case of sand, where the consumption exceeded the receipts by 3,090 cubic yards.

Power Plant—The operation of the power plant during the month was satisfactory.

Iron and Steel Work—The setting of the quoin posts and anchorages in the intermediate gates of the upper lock was continued, and the setting of the cylindrical valves in the upper lock was completed.

Back Fill—The back filling was continued during the month, 18,918 cubic yards being placed, increasing the total to 22,376 cubic yards.

GATUN DAM.

Construction during the month increased the total fill by 641,616 cubic yards, making the total amount in place 9,765,400 cubic yards.

Hydraulic Fill—The dredges increased the hydraulic fill by 406,606 cubic yards, which made the total hydraulic fill in place at the close of the month 4,521,820 cubic yards.

Dry Fill—The material received from the Central Division, the Locks, the Spillway and the plant excavation, amounting to 235,010 cubic yards, was placed on the north and south toes of the Dam east and west of the Spillway, making the total dry fill in place 5,243,580 cubic yards.

GATUN SPILLWAY.

Concrete—The construction of the east and west approach walls was continued, 3,573 cubic yards of concrete being placed, which increased the total to 90,184 cubic yards.

Excavation—Excavation during the month for the forebay and for the foundations to the approach walls amounting to 12,481 cubic yards, increased the total Spillway excavation to 1,457,963 cubic yards.

Cut-off Levee—The construction of the levee from Spillway Hill to Mindi Hill was continued, 17,591 cubic yards being placed, making the total at the end of the month 163,212 cubic yards.

HARBOR AND CHANNEL SECTION.

Dredging from the Ocean to Mindi—Six dredges removed from the Canal prism 464,265 cubic yards of earth, and 44,564 cubic yards of rock. In addition, the dredge *Chagres* removed 1,104 cubic yards of earth and 833 cubic yards of rock at Pier 11, and pipe line dredge *No. 4* removed 4,592 cubic yards of earth from the French canal. On August 31st, 38 feet of water could be carried from zero to mile 4 plus 2,000 feet; 26 feet to mile 4 plus 2,300 feet; 30 feet to mile 5 plus 00 feet; 20 feet to mile 5 plus 1,000 feet, and 15 feet to mile 5 plus 2,550 feet, the end of the cut.

PORTO BELLO.

Performance of rock crusher plant:

	Hours.
Length of working day	16.00
Average number of hours per day (actual working time)	11.18
	Cu. Yds.
Average number of cubic yards crushed per hour of working day	173.44
Average number of cubic yards crushed per working hour	248.25
Total output for the month	74,925.00

SAND, STONE AND CEMENT SERVICE.

In connection with this service, plant steamed about 10,518 miles, handled 692 barges, and carried about 2,359 passengers.

COLON BREAKWATERS.

Trestle work on the breakwater was commenced August 9, and at the end of the month 754 linear feet had been completed. Survey work was continued, and a large amount of material unloaded. The pipe line was extended to Toro Point, and the distribution system begun.

NOMBRE DE DIOS.

During the month 53 barge loads, containing 29,022 cubic yards of sand were shipped to Gatun.

MUNICIPAL ENGINEERING.

The usual work of maintenance of roads, waterworks and sewers, pumping stations, etc., was satisfactorily performed.

Central Division.

During the month of August the total amount of material excavated in the Central Division was 1,612,396 cubic yards, of which 434,775 cubic yards were classified as earth, and 1,177,621 cubic yards as rock. Of this quantity, 1,602,738 cubic yards were removed by steam shovels, 4,536 cubic yards by contract, 278 cubic yards by hand, and 4,844 cubic yards were blasted and washed out by high water. Of the total, 1,607,738 cubic yards consisted of primary excavation for the Canal prism, 4,380 cubic yards for the Obispo Diversion, and 278 cubic yards for tracks and work not useful to the completed Canal.

The daily average number of steam shovels at work during the month was 44.63, and the total number of shovel days was 1,205, as compared with 42.84 shovels at work during the month of July, with 1,071 shovel days.

For comparison with the work done by steam shovels during the corresponding month of the previous year, the following table has been prepared:

Period.	Excavated by shovels.	Classification of material.		Av. No. of shovels at work.	W'kg days.	Av. yards per shovel day.
		Rock.	Earth.			
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*			*C. Y.*
1909: Aug.	1,376,386	1,035,515	340,871	46.73	26	1,132.9
1910: Aug.	1,602,738	1,174,446	428,292	44.63	27	1,330.1

Rainfall at Empire: 1909, 7.20 ins.; 1910, 10.08 ins.

The above table shows the average output per shovel day to be 17.41 per cent greater in

August, 1910, than in the corresponding month of the previous year.

The total amount of material excavated from the prism in the Culebra section of the Central Division in August, 1910, was 1,377,714 cubic yards, being the highest record in that section for the month of August, the previous high record having been in August, 1908, when 1,173,800 cubic yards were removed.

The total estimated amount of material to be removed in the Central Division is 97,125,018 cubic yards, and up to September 1, 1910, 61,747,577 cubic yards had been removed, leaving 35,377,441 cubic yards to be removed in order to complete all excavation in the Central Division. From these figures it will be seen that 63.58 per cent of all excavation in the Central Division had been completed up to the close of the month of August, and 36.42 per cent remained unfinished. Considering the two sections which compose the Central Division, the excavation completed and that to be completed at the close of August operations were as follows:

CULEBRA SECTION.	*Cubic Yards.*
Completed	51,826,590
To be completed	32,360,134
CHAGRES SECTION.	
Completed	9,920,987
To be completed	3,017,307

From the above figures it will be seen that the Culebra section, locally known as Culebra Cut, was 61.57 per cent completed, with 38.43 per cent to be completed; the Chagres section was 76.65 per cent completed, with 23.35 per cent to be completed.

During the month the following quantities of material were hauled from the Canal prism and dumped in the embankment for the new roadbed for the relocation of the Panama railroad: 7,841 cubic yards in the vicinity of Pedro Miguel; 10,392 cubic yards between Caimito and Gamboa. The total at the close of the month used for this purpose was 3,713,268 cubic yards. During the month, 147,420 cubic yards of rock and earth from the Culebra Cut were transported to Gatun for use in the construction of the Dam, making the total at the close of the month for this purpose 1,831,617 cubic yards.

The daily average number of laborers at work on the whole division during the month was 8,562, the average number of gold men being 886.

Pacific Division.

DISTRICT NO. 1—LOCKS AND DAMS.

The total excavation during the month amounted to 30,337 cubic yards. During August no dry filling was added to the prism of the west dam at Pedro Miguel, leaving the total amount in place at the end of the month 260,852 cubic yards, as previously reported; 2,360 cubic yards of dry filling were placed in back fill, increasing the total to 15,943 cubic yards. At Miraflores, 10,898 cubic yards of dry filling were added to the toe; no hydraulic filling was added to the core of the west dam, making the total at the close of the month 536,089 cubic yards, and 138,587 cubic yards, respectively. During the month, 6,355 cubic yards of dry filling were placed in back fill, increasing the total to 133,545 cubic yards.

PEDRO MIGUEL HANDLING PLANT.

The operation of the handling plant at Pedro Miguel continued with few interruptions during the month. The output from the plant was increased 20 per cent. One temporary mixer at the south end of the west storage trestle, in the forebay, was installed, and work was commenced on the temporary mixing plant at the south end of the east storage trestle.

Concrete Work—The concrete work for August showed an increase of 9,800 cubic yards over the output for July. The total amount of concrete placed during the month was 51,264 cubic yards; 28,579 cubic yards being laid in the center wall, 559 cubic yards in the head wall, 17,555 cubic yards in the side walls, and 4,571 cubic yards in the floors.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT PEDRO MIGUEL.

	Permanent Plant.	Auxiliary Plant.
Average number of hours per day worked laying concrete and large stone (actual working time)	7.28	5.94
Average number of mixers per day	4.00	(Mixed on berm cranes)
	Cu. Yds.	*Cu. Yds.*
Average hourly output per mixer (actual working time)	65.68	....
Average amount of concrete and large stone laid per hour per chamber crane (actual working time)	61.26	19.22
	Cu. Yds.	*Cu. Yds.*
Large rock laid	334	349
Concrete laid	47,845	2,736
Total	48,179	3,085

Pedro Miguel auxiliary plant, consisting of locomotive cranes and derricks, placed concrete mixed on berm cranes.

MIRAFLORES HANDLING PLANT.

The berm crane on the east bank at Miraflores was ready to handle concrete at the end of the month, and the mixers on the east storage trestle were in shape to begin work. The berm crane on the west berm was 90 per cent completed. Work was pushed on the west storage trestle, and the east storage trestle was completed and filling commenced.

Concrete Work—The concrete work for August showed an increase of 2,358 cubic yards over the output for July. The total amount of concrete placed was 6,030 cubic yards, which was laid in the floor system of the upper lock.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT MIRAFLORES.

	Permanent Plant.	Auxiliary Plant.
Average number of hours per day worked laying concrete and large stone (actual working time)	No plant.	No plant
Average number of mixers per day	....	3.00
	Cu. Yds.	*Cu. Yds.*
Average hourly output per mixer (actual working time)	....	9.48
Average amount of concrete and large stone laid per hour per chamber crane (actual working time)	....	No plant
	Cu. Yds.	*Cu. Yds.*
Large rock laid	....	307
Concrete laid	....	5,723
Total	....	6,030

DISTRICT NO. 2—DREDGING.

The following table gives the output of the five dredges which were in operation during the month:

DREDGE.	Type.	WORK.		PLANT.		Total.	Remarks.
		Earth.	Rock.	Earth.	Rock.		
		Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*	
Cardenas	Dipper	70,287	....	....	....	70,287	Place measurement
Badger	Ladder	94,604	1,100	....	....	95,704	Place measurement
Marmot	Ladder	75,317	4,710	18,000	....	98,027	Place measurement
Mole	Ladder	8,400	6,810	....	....	15,210	Place measurement
Culebra	Suction	245,741	....	....	....	245,741	Scow measurement
Total	....	494,349	12,620	18,000	....	524,969	

CHAMÉ SAND EXCAVATION.

During the month approximately 45,600 cubic yards of sand were obtained.

HYDRAULIC EXCAVATION PLANT.

The erection of the Agua Dulce pumping station for the hydraulic excavation was continued, and was 98 per cent completed at the close of the month.

BALBOA TERMINAL HARBOR.

Boring on the site of the proposed terminal harbor at Balboa was continued during the month.

DISTRICT NO. 3—MUNICIPAL AND SANITARY ENGINEERING.

The maintenance and operation of the various municipal plants was continued satisfactorily.

Rio Grande Reservoir—The Venturi meter at the Rio Grande reservoir registered an outflow of 105,942,000 gallons of water during the month, or a daily average of 3,417,484 gallons. The elevation of the water in the reservoir on August 31 was 235.99 feet.

Cocoli Pumping and Filtration Plant—During the month, 19,076,000 gallons of water were delivered to the Rio Grande main.

Panama Improvements—During the month, the work on the new improvements in the city of Panama progressed satisfactorily.

Pedro Miguel Suspension Bridge—The suspension bridge over the Pedro Miguel River was completed.

DISTRICT NO. 4—ANCON QUARRY.

Performance of rock crusher plant:

	Hours.
Length of working day	9.00
Average number of hours per day (actual working time)	6.80
	Cu. Yds.
Average number of cubic yards crushed per hour of working day	251.40
Average number of cubic yards crushed per working hour	332.67
Total output for the month	61,092.00

Relocation of Panama Railroad.

During the month, 247,582 cubic yards of material were excavated, making the total excavation at the close of the month 4,342,328 cubic yards, and 313,675 cubic yards of material were placed in embankment, making the total at the close of the month 9,457,865 cubic yards.

During the month, 838 linear feet of temporary trestle were driven, and the work of constructing bridges and culverts was continued. One thousand linear feet of 90-pound permanent track were laid during August, making the totals at the close of the month, 158,458 linear feet of 70-pound track and 18,997 linear feet of 90-pound track.

The total force averaged 1,924 men during the month.

Quartermaster's Department.

Labor—The labor situation continued satisfactory.

Sanitation—The force on grass cutting was reduced during the month, and a further reduction will be made during September.

Material and Supplies—During the month, 38,953 tons of material were received, of which 32,930 tons were transported on Panama railroad steamers. More than three million board measure feet of yellow pine and Douglas fir lumber, 1,358 cross-ties, and 2,847 piles were received. The total value of the material received during the month was $862,833.62.

Subsistence Department.

The operation of the European laborers' messes, the colored laborers' kitchens, and the line hotels showed a net profit of $2,915.89; the operation of the Hotel Tivoli showed a net loss of $1,188.03, and there was a net profit on restaurants and penitentiary of $172.30. The net profit on subsistence operations was $1,360.33.

Department of Civil Administration.

COURTS.

Twenty-three civil and 36 criminal cases were disposed of in the Circuit Courts of the Canal Zone, and 168 civil and 626 criminal cases in the District Courts.

DIVISION OF POSTS, CUSTOMS AND REVENUES.

Money order sales for August amounted to $424,465.86, and the fees to $1,836.25. Receipts from stamp and card sales and newspaper postage aggregated $6,399.25. The total collections of the division were $15,857.79, and the collections on account of court fines, costs and fees, $3,593.89.

During the month, 21 vessels entered at and 21 vessels cleared from the port of Ancon, and 24 vessels entered at and 23 vessels cleared from the port of Cristobal.

DIVISION OF POLICE AND PRISONS.

The number of arrests during the month was 618, of whom 579 were men and 39 women, 47 nationalities being represented.

Eleven convicts were committed to the penitentiary, and 8 were discharged, and on August 31st, 143 convicts were confined in the penitentiary. The cost of guarding and subsisting the convicts was $2,618.41, and the value of the work performed by them was $2,231.45. Their services were utilized in the construction of the Corozal-Pedro Miguel road.

DIVISION OF FIRE PROTECTION.

Nine fires were reported in the Canal Zone during the month. The estimated value of property involved in the Zone was $45,000, and the damage was $5 to Government property, and $15 to private property.

DIVISION OF PUBLIC WORKS.

In the city of Panama the average daily consumption of water was 1,157,795 gallons, and in Colon 857,857 gallons.

The usual inspection and maintenance work of this division was performed during the month.

Department of Sanitation.

The total number of deaths from all causes among employes during August was 55, thirty-one being from disease and 24 from external causes. The annual average per thousand from all causes was 13.04; from diseases 7.35; external causes 5.69. The death rate among employes for the month of August of previous years since American occupation was as follows:

1904	13.93
1905	19.97
1906	62.12
1907	27.59
1908	11.39
1909	10.28

The annual average per thousand of deaths in the cities of Panama and Colon, and in the Canal Zone, was 19.85, as compared with 16.20 for August, 1909; 26.65 for August, 1908; 33.75 for August, 1907; and 64.12 for August, 1906.

For diseases, the annual average per thousand of employes for the month was as follows: White, 5.28; colored, 8.11. For August, 1909, the average was: White, 6.19; colored, 6.10.

Among employes there were 4 deaths from malarial fever; 7 from lobar pneumonia; 2 from tuberculosis of the lungs; 2 from other forms of tuberculosis; 1 from tetanus, and 15 from other diseases.

No cases of yellow fever, smallpox or plague originated on or were brought to the Isthmus during the month.

Respectfully,
GEO. W. GOETHALS, *Chairman.*

PERSONAL.

Mr. J. A. Smith sailed for the States on his annual leave of absence, on the *Panama* from Cristobal, on September 16.

Chief Justice H. A. Gudger sailed on the *Panama* from Cristobal on Friday, September 16, on his annual leave of absence in the States.

Mr. C. M. Saville left for the States on the *Panama* on September 16, on his annual leave.

Order of Isthmian Conductors.

The next meeting of the O. I. C. will be held at Paraiso lodge hall, on Sunday, September 25, at 1.30 p. m.

F. H. ANDERSON,
Secretary and Treasurer.

Pedro Miguel, September 20, 1910.

Rainfall from September 1 to 17, Inclusive.

MIDNIGHT TO MIDNIGHT.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	1.09	4	2.78
Balboa	2.17	4	3.39
Miraflores	2.35	5	6.56
Pedro Miguel	2.36	4	4.98
Rio Grande	1.79	4	3.36
Central Section—			
Culebra	1.60	4	3.65
Camacho	1.18	4	4.00
Empire	1.62	9	3.56
Gamboa	2.37	4	5.87
Alhajuela	2.94	1	10.47
El Vigia	2.60	1	10.16
Gorgona	3.00	4	6.65
San Pablo	3.80	4	10.25
Tabernilla	6.19	4	12.54
Bohio	3.73	4	12.39
Monte Lirio	4.48	5	14.99
Atlantic Section—			
Gatun	2.71	4	7.61
Brazos Brook	3.43	5	6.15
Cristobal	1.55	5	5.21
*Porto Bello	1.48	4	*5.14
Nombre de Dios	1.25	17	3.16

*To 5 p. m., September 16.

Band Concert.

The Isthmian Canal Commission Band will give a concert at Empire, C. Z., on Sunday, September 25, 1910, at 6 p. m. The program follows:

1 March—*Arcade Girl*........................Pryor
2 Overture—*Amazon*........................Kiesler
3 Intermezzo—*Silver Bell*..................Wenrich
4 Selection—*The Dollar Princess* (By request)..Fall
5 Concert Piece—*Chimes Of Love*..........d'Albert
6 Medley Selection—*Mills' 1910*............Schulz
Introducing "Lily of the Prairie," "I'd Like to be the Fellow That Girl is Waiting For," "Highland Mary," "Everybody's Happy When the Moon Shines," "You For Me When You're Sweet Sixteen," "Comical Eyes," "Sicilian Chimes," "My Friend Jim-a-da-Jeff," and "Margarita."
7 Waltz—*Cupid Astray* ....Rolfe
8 *a* Barn Dance—*By the Light of the Silvery Moon*.............................Edwards
b Medley March—*Put on Your Old Gray Bonnet*............................Wenrich
9 El Gitanillo—*Tango*.....................France
10 March—*Calvary Commandery*.............Clarke

Chas. E. Jennings, *Musical Director.*

The next concert will be given at Balboa on Sunday, October 2.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

The meeting of the discussion club on Wednesday evening, September 14, was led by F. C. Freeman; subject, "Our Thoughts." The meeting of the club held on Wednesday evening, September 21, was led by Geo. R. D. Kramer; subject, "Exercise."

An informal "social" will be held in the clubhouse on Friday evening, September 23. A cordial invitation is extended to every man and woman in Culebra, whether members or not, to be present. A special program will be given.

Cristobal's second team bowled a tournament match at Culebra on Saturday evening, September 17. The Cristobal team won by the following score:

Cristobal.				Culebra.			
Barrett	156	199	163	Mengel	157	176	160
Grove	159	133	119	Fleischman	184	158	162
Weston	171	141	118	R. Kop'ski	145	117	....
DeCora	148	165	122	Huttleme'r	125	158	180
Blackburn	150	173	171	Cornthwa'e	145	119	....
				Hayes			176
				Fox			139
Total	784	811	693	Total	756	728	817

Empire's first team will bowl Culebra's first team at Culebra on Saturday evening, September 24.

The pool tournament began Monday evening, September 19. Seventeen men have enrolled.

About 30 men have enrolled in the local big pin handicap. The following was the standing on September 17:

		Won	Lost	Per cent
1	Dougherty	3	0	1000
2	Hostetter	2	0	1000
3	Mason	1	0	1000
4	Hayes	7	2	777
5	Herrington	3	1	750
6	Kramer	5	2	714
7	Hurst	4	2	666
8	Huttlemeyer	13	7	650
9	Cornthwaite	9	5	643
10	Brown	5	3	625
11	Mengel	13	8	619
12	Dunham	6	4	600
13	McCann	3	2	600
14	Leibundguth	7	6	545
15	Palmer	1	1	500
16	Lee	2	2	500
17	Cohen	1	1	500
18	Koperski, R.	9	10	477
19	Fleischman	5	6	454
20	Sickler	3	4	428
21	Fox	8	12	400
22	Koperski, E.	6	10	375
23	Coppin	2	5	285
24	Hill	2	5	285
25	Warner	2	5	285
26	Case	3	9	250
27	Lawler	1	4	200
28	Leonard	0	2	000
29	Baumer	0	7	000
30	McIlvaine	0	1	000

EMPIRE.

Empire's first team took two out of three games from Gatun's first team on the Empire alleys on Saturday evening, September 17. Following are the scores:

Gatun.				Empire.			
Barte	139	188	189	Brown	147	133	148
Harrington	162	150	147	Potter	207	156	223
Severn	142	135	....	Shaughn'y	156	160	181
DeMoll	182	178	165	Pearson	168	147	111
Ponton	131	170	147	Huson	179	190	178
Wolf			190				
Total	756	821	838	Total	857	786	841

The discussion club held a meeting on the evening of September 14, under the leadership of W. W. Warwick; subject, "The Benefit of a Hard Task."

Large crowds attended the moving picture entertainments on September 13 and 20. These entertainments will be continued on Tuesday nights as often as films can be secured.

The literary and debating society has prepared a literary and musical program for its monthly public meeting to be held on Friday evening, September 23.

On Saturday night, September 24, Culebra's second team will bowl Empire's second team on the Empire alleys.

GORGONA.

The moving picture entertainment on Friday evening, September 16, was well attended. There will be another entertainment of the same kind on Friday night, September 23, with a complete change of films.

On Sunday night, September 25, Miss MacLaren will read Wilson Barrett's play "The Sign of the Cross." Admission is free to all. A. B. Dickson of Empire will sing.

The discussion club was led by E. A. Putnam of Culebra on Tuesday evening, September 20; subject, "What Is Failure?"

There will be a match game of basketball on Wednesday evening, September 28, between the "Nut-Splitters", and a miscellaneous team. Every one is invited to attend.

CRISTOBAL.

On Wednesday night, September 14, the first and second teams bowled a match on the local alleys, with the following results:

First Team.				Second Team.			
Louch......	147	136	180	Barrett....	172	150	175
Collins......	158	155	161	Blackburn	166	122	148
Rabbitt.....	148	169	169	Weston...	182	154	166
Thomas.....	236	187	195	Burns, T...	136	94	161
Bullard.....	172	213	178	Grover....	132	...	...
				O'Meara......		183	162
Total....:	861	860	883	Total...	788	703	812

The basketball team from the U. S.S. *Tacoma* played the Y. M. C. A. "Picks" on Wednesday night, September 14, the "Picks" winning by a score of 20 to 14.

On Thursday night, September 15, the discussion club was led by Geo. R. D. Kramer; subject, "Exercise."

On Saturday night, September 17, the first team from Culebra took three games from the first team of Cristobal on the local alleys. Following are the scores:

Culebra.				Cristobal.			
Cohen......	162	158	174	Louch.....	147	177	122
Hostetter...	161	180	144	Rabbitt...	126	136	....
Herrington..	172	130	183	Burns, T..........			183
Case.......	206	178	176	Collins....	169	160	159
Dougherty..	221	178	192	Thomas...	157	163	147
				Bullard...	174	175	182
Total.....	922	824	869	Total...	773	811	793

The 200 bowling scores for the week ending September 17 were made by the following men: Grover, 205; Adams, 211; Bullard, 213; Blackburn, 214; Thomas, 236, 233.

On Thursday night, September 22, the discussion club will be led by T. S. Booz of Gorgona; subject, "Fellowship."

On Saturday night, September 24, the first basketball team will go to Empire to play a return game.

The membership clock stands at 410, and more members are coming.

GATUN.

The next meeting of the discussion club will be held on Friday night, September 23, under the leadership of Mr. Dickson of Empire. The subject will be "Responsibility."

Miss Gay Zenola MacLaren will return on Wednesday, September 28, when she will read "The Sign of the Cross."

The Gatun second team took three games from the Empire second team on the Gatun alleys on Saturday evening, September 17. Following are the scores:

Gatun.				Empire.			
Myers......	156	152	171	Nicodemus	133	114	145
C.R.H'r'g'n.	168	165	138	Goolsby...	151	119	165
Dalton.....	149	163	126	Sawtelle...	128	153	138
Wilson......	164	130	155	Giavelli...	145	168	141
Hodges.....	137	162	173	Gustavson.	213	191	155
Total.....	774	772	763	Total...	770	745	744

PORTO BELLO.

The meeting of the discussion club on Sunday evening, September 11, was led by E. R. Hall of Culebra; subject, "What Is Happiness?" About 25 men were present and much interest was shown in the discussion.

Miss Gay Zenola MacLaren of New York gave an imitative recital of the play "The Music Master" on Saturday night, September 17. The entertainment was enjoyed by a large crowd.

Sale of Nine Dump Carts.

There will be sold at public auction by the District Quartermaster at Ancon, C. Z., at the old corral, at 3 p. m., Saturday, September 24, 1910, to the highest bidder for cash, the following Isthmian Canal Commission property:

Nine (9) dump carts.

The Government reserves the right to accept or reject any or all bids. For further information apply to the District Quartermaster, Ancon, C. Z.

R. E. Wood, *Acting Chief Quartermaster.*

The following vessels arrived at and departed from the port of Balboa during the week ending September 17:

Arrivals—September 10, *Yorktown*, from San Juan del Sur; September 13, *City of Panama*, from San Francisco; September 15, *Chiriqui*, from Buenaventura; September 16, *Loa*, from south ports.

Departures—September 11, *Guatemala*, to south ports; September 14, *Sydney*, to San Francisco, *Manavi*, to intermediate ports; September 15, *Arica*, to Guayaquil.

OFFICIAL CIRCULARS.

Acting General Superintendent, P. R. R.

Colon, R. P., September 14, 1910.

Circular No. 196:

To All Concerned: Effective September 16, 1910, Lieut. F. Mears will act as General Superintendent. during the absence of Mr. J. A. Smith, on leave.

Geo. W. Goethals, *President.*

In Charge of Third Division.

Culebra, C. Z., September 15, 1910

Circular No. 351:

Effective September 16, 1910, Mr. R. R. Wiggins, Assistant Engineer, will be in charge of the work of the Third Division of the office of the Chief Engineer during the absence of Mr. C. M. Saville, Assistant Engineer, on leave.

Geo. W. Goethals,
Chairman and Chief Engineer.

Misdirected Letters.

Ancon, C. Z., September 21, 1910.

The following insufficiently addressed letters originating in the United States and its possessions have been received in the office of the Director of Posts, and may be secured upon request of the addressee:

Allman, F. F. A.
Baylor, Stewart
Boggs, Mr.
Brassard, Joseph
Campbell, Mrs. Agnes
Campbell, Bert
Coger, M.
Dickson, Alfred B.
Doran, Thos. F.
Fantz, W.
Foot, Mrs. O.
Frank, Gus
Geddes, C. J.
Hanna, John
Hinkson, Mrs. Henry M.
Holmes, John
Hughes, Tom P.
Jenkins, Benjamin
Kostor, Josef
McCoy, Wm.
McCray, H. L.
Murphy, Eugene I.
Nickolson, Ira V.
Niven, C. L.
Phillips, Reginald
Rogers, William
Rush, E.
Sewell, Miss Grace
Simpson, F. Saville
Skinner, F.
Smith, J. W.
Starks, James
Stuart, Frank S.
Stuntz, Willard Glenn
Tottingham, Fred M.
Wadson, I. I.
Willman, Mrs. Arthur
Willson, L. E.
Yammie, Margaret

PANAMA RAILROAD COMPANY.

PASSENGER TRAIN TIME TABLE No. 7—IN EFFECT SEPTEMBER 25, 1910.

SOUTHWARD.								Miles from Colon.	STATIONS.	NORTHWARD.									
SUNDAY ONLY.					DAILY EXCEPT SUNDAY.					DAILY EXCEPT SUNDAY.				SUNDAY ONLY.					
29	27	25	23	21	7	5	3			2	4	6	8	20	22	24	26	28	30
P. M.	P. M.	P. M.	A. M.	A. M.	P. M.	A. M.	A. M.			A. M.	P. M.	P. M.	P. M.	A. M.	P. M.	P. M.	P. M.	P. M.	P. M.
7.00	4.00	1.00	10.00	6.45	4.35	10.30	5.15	0.00	Leave. †Colon. Arrive.	8.45	1.00	3.45	7.45	9.00	12.15	3.15	6.15	9.15	11.55
s 7.05	s 4.05	s 1.05	s 10.05	s 6.50	4.40	10.35	5.20	1.77	†Mount Hope Cabin	8.41	12.55	3.41	7.41	s 8.55	s 12.08	s 3.08	s 6.08	s 9.08	s 11.50
f 7.10	4.10	1.10	f 10.10	6.55	4.45	10.40	5.25	4.37	†Mindi	8.32	12.51	3.31	7.31	f 8.51	12.02	3.02	6.02	9.02	f 11.45
f 7.15			f 10.15					5.94	New Gatun					s 8.46	P. M.				f 11.40
s 7.18	s 4.18	s 1.18	s 10.18	s 7.03	s 4 53	s 10.45	s 5.33	6.79	†Gatun	s 8.24	s 12.40	s 3.22	s 7.22	s 8.40	s 11.55	s 2.55	s 5.55	s 8.55	s 11.35
s 7.40	f 4.40	f 1.40	f 10.40	f 7.25	s 5.11	f 11.10	s 5.55	15.26	†Bohio	s 8 01	f 12.18	f 3.01	s 7.01	s 8.18	s 11.33	s 2.33	s 5.33	s 8.33	f 11.13
s 7 47	s 4.47	s 1.47	s 10.47	f 7.32	s 5.18	f 11.17	s 6.02	18 51	Frijoles	s 7.54	s 12.10	2.54	s 6.54	s 8 10	s 11.25	s 2.25	s 5.25	s 8.25	s 11.05
s 7.55	s 4.55	s 1.55	s 10.55	s 7.40	s 5.25	s 11.25	6.10	21.37	†Tabernilla	s 7.48	s 12.04	s 2.48	s 6.48	s 8.04	s 11.19	s 2.19	s 5.19	s 8.19	s 10.59
					5.26	11.26	6.12	21.61	†Tabernilla Cabin	7.47	12.01	2.47	6.47						
					5.28	11.28	6.14	22.87	†Barbacoas Cabin	7.44	P. M. 11.58	2.44	6.44						
s 8.00	s 5.00	s 2.00	s 11 00	s 7.45	s 5.30	s 11.30	s 6.15	23.30	†San Pablo	s 7.43	s 11.57	s 2.43	s 6.43	s 7.57	s 11.12	s 2.12	s 5.12	s 8.12	s 10.52
f 8.08	f 5.08	f 2.08	f 11.08	f 7.51	f 5.36	f 11.38	f 6.22	25.74	†Mamei	f 7.37	f 11.49	f 2.37	f 6.37	f 7.49	f 11.04	f 2.04	f 5.04	f 8.04	f 10.44
s 8.13	s 5.13	s 2.13	s 11.13	s 7.58	s 5.42	s 11.44	s 6.29	28.27	†Gorgona	s 7.32	s 11.42	s 2.32	s 6.32	s 7.42	s 10.57	s 1.57	s 4.57	s 7.57	s 10.37
s 8.18	s 5.18	s 2.18	s 11.18	s 8.03	s 5.47	s 11.49	s 6.34	29 68	†Matachin	s 7.27	s 11.37	s 2.27	s 6.27	s 7 37	s 10.52	s 1.52	s 4.52	s 7.52	s 10.32
s 8.22	s 5.22	s 2.22	s 11.22	s 8 08	s 5.51	s 11.53	s 6.39	31.01	†Bas Obispo	s 7.23	s 11.33	s 2.23	s 6.23	s 7.33	s 10.48	s 1.48	s 4.48	s 7.48	s 10.28
s 8.29	s 5.29	s 2.29	s 11.29	s 8.16	s 5.58	s 12.00	s 6.48	32.62	Las Cascadas	s 7.17	s 11.25	s 2.17	s 6.17	s 7.25	s 10.40	s 1.40	s 4.40	s 7.40	s 10.20
s 8.34	s 5.34	s 2.34	s 11.34	s 8.21	s 6.03	P. M. s 12.05	s 6.54	34.91	†Empire	s 7.12	s 11.21	s 2.12	s 6.12	s 7.21	s 10.36	s 1.36	s 4.36	s 7.36	s 10.16
s 8.39	s 5.39	s 2.39	s 11 39	8.26	s 6.08	s 12.10	s 7.01	35.90	†Culebra	s 7.08	s 11.15	s 2.08	s 6.07	s 7.15	s 10.30	s 1.30	s 4.30	s 7.30	s 10.10
8.41	5.41	2.41	11.41	8.28	6.12	s 12 12	7 05	36.52	†Summit Cabin	7.05	11.13	2.05	6.05	7.13	10 28	1.28	4.28	7.28	10.08
8.47	5.47	2.47	11.47	8.35	6.22	12 20	7.11	39.77	†Paraiso Jct.	6.53	11.06	1.54	5.54	7.06	10.21	1.21	4.21	7.21	10.01
s 8.51	s 5.51	s 2.51	s 11.51	s 8.40	s 6.24	s 12.22	s 7.14	40.15	†Pedro Miguel	s 6.50	s 11.03	s 1.50	s 5.50	s 7.03	s 10.18	s 1.18	s 4.18	s 7.18	s 9.58
s 8.56	s 5.56	s 2.56	s 11.56	s 8.45	s 6.29	s 12.27	s 7.17	41.66	Miraflores	s 6.46	s 11.00	s 1.46	s 5.46	s 7.00	s 10.15	s 1.15	s 4.15	s 7.15	f 9.55
9.02	6.02	3.02	P. M. 12.02	8.50	6.35	12.33	7.20	43.86	†Corozal Jct.	6 40	10.55	1.40	5.40	6.55	10.10	1.10	4.10	7.10	9.50
s 9.04	s 6.04	s 3.04	s 12.04	s 8.51	s 6 37	s 12.34	s 7.21	44.16	†Corozal	s 6.39	s 10.53	s 1.38	s 5.38	s 6.53	s 10.08	s 1.08	s 4.08	s 7.08	s 9.48
f 9.06	f 6.06	f 3.06	f 12.06	f 8.53	f 6.41	f 12.36	f 7.23	44.84	Camp Diablo	s 6.35	f 10 49	f 1.35	f 5.35	f 6.49	f 10.04	f 1.04	f 4.04	f 7.04	f 9.44
9.15	6.15	3.15	12.15	9.00	6.50	12.45	7.30	47.07	Arrive. †Panama. Leave.	6.30	10.45	1.30	5.30	6.45	10.00	1.00	4.00	7.00	9.40
P. M.	P. M.	P. M.	P. M.	A. M.	P. M.	P. M.	A. M.			A. M.	A. M.	P. M.	P. M.	A. M.	A. M.	P. M.	P. M.	P. M.	P. M.
29	27	25	23	21	7	5	3		†Telegraph station. f Flag station. s Ston.	2	4	6	8	20	22	24	26	28	30

GATUN SHUTTLE TRAIN.

DAILY EXCEPT SUNDAY.					STATIONS.	DAILY EXCEPT SUNDAY.				
39	37	35	33	31		32	34	36	38	40
P. M.	P. M.	P. M.	A. M.	A. M.	Leave. Arrive.	A. M.	A. M.	P. M.	P. M.	
5.30	4.00	12.20	10.00	6.20	Colon	8.20	11.25	3.20	5.20	6.50
s 5.35	s 4.05	s 12.25	s 10 05	s 6.25	Mount Hope Cabin	s 8.15	s 11.20	s 3.15	s 5.15	s 6.45
s 5.40	s 4.10	s 12.30	s 10.10	s 6.30	Mindi	s 8.10	s 11.15	s 3.10	s 5.10	s 6.40
s 5.45	s 4.15	s 12.35	s 10.15	s 6.35	New Gatun	s 8.05	s 11.10	s 3.05	s 5.05	s 6.35
5.50	4.20	12.40	10.20	6.40	Gatun	8.00	11.05	3.00	5.00	6.30

COMMISSARY DEPARTMENT.

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning September 20:

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	7
Shoulder, neck trimmed off, (4 lbs. and over), per pound	10
Entire forequarters (not trimmed) 10 pounds and over, per pound	9
Legs, (8 to 10 pounds), per pound	19
Cutlets, per pound	20
Short cut chops, per pound	22
Lamb—Stewing, per pound	7
Entire forequarters, neck trimmed off, per pound	10
Legs (5 to 8 pounds), per pound	24
Chops, per pound	26
Cutlets, per pound	26
Veal—Stewing, per pound	10
Shoulder for roasting (not under 4 pounds), per pound	15
Loin for roasting, per pound	19
Chops, per pound	22
Cutlets, per pound	26
Pork cuts, per pound	22
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	9
Corned, per pound	12, 14, 16
Chuck roast, (3 pounds and over), per pound	13
Pot roast, per pound	15
Rib-roast, second cut (not under 3½ pounds), per pound	18
Rib roast, first cut (not under 3 pounds), per pound	20
Sirloin roast, per pound	21
Rump roast, per pound	21
Porterhouse roast, per pound	21
Steak, Chuck, per pound	14
Round, per pound	15
Rib, per pound	20
Sirloin, per pound	21
Porterhouse, per pound	21
Rump, per pound	21
Tenderloin, per pound	24

MISCELLANEOUS.

	Price.
Livers—Beef, per pound	10
Calf, each	60
Half, each	30
Sausage—Pork, per pound	17
Bologna, per pound	14
Frankfurter, per pound	14
Leberwurst, per pound	14
Sweet bread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	31
Eggs, fresh, ½ dozen only	17
Bluefish, fresh, per pound	16
Cod, fresh, per pound	10
Halibut, fresh, per pound	13

POULTRY AND GAME.

	Price.
Chickens—Fancy Roasting, large, each	1.50
medium, each	1.30
Fowls, each	70, 82, 93, 1.04, 1.15
Ducks, large, each	1.50
medium, each	1.30
Broilers, each	75
Turkeys, per pound	30
Squabs, each	35
Capons, each	2.50
Geese, fatted, each	2.60
Pheasants, each	70, 1.00
Partridges, each	50
Grouse, each	85

CURED AND PICKLED MEATS.

	Price.
Ham—English York Cut, per pound	30
German, Westphalia, per pound	36
Sugar cured, per pound	24
Sugar cured, sliced, per pound	27
Half, for boiling, per pound	25
Boiled, per pound	32
Hocks, per pound	‡18
Bacon—Breakfast, whole piece, per pound	30
Breakfast, sliced, per pound	31
Beef, salt, family, per pound	12
Pork, salt, family, per pound	16
Ox tongues, each	80
Pigs' feet, per pound	10
tongues, per pound	16
Mutton, mess, per pound	7

DAIRY PRODUCTS.

	Price.
Butter—Creamery special, per pound	40
Cheese—Roquefort, per pound	38
Philadelphia Cream, cake	10
Young America, per pound	22
Swiss, per pound	26
Edam, each	1.00
Camembert, in 2-pound tins, tin	38
Camembert, in ½-pound tins, tin	14
Neufchatel, each	6
Gouda, per pound	34
Parmesan, per pound	35
Milk, Briarcliff, bottle	**25
Buttermilk, bottle	**15

VEGETABLES AND FRUITS.

	Price.
Beets, per pound	3½
Celery, per head	6
Carrots, per pound	3½
Cabbage, per pound	3½
Cucumbers, per pound	5
Lettuce, per head	5, 7, 10
Onions, per pound	3½
Potatoes, white, per pound	3½
sweet, per pound	2½
Rhubarb, per pound	6
Squash, per pound	4
Tomatoes, per pound	8
Turnips, per pound	3
Yams, per pound	3½
Apples, per pound	5
Canteloupes, each	*7
Grapes, per pound	8
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12
Peaches, per pound	8, 10
Pears, per pound	*8
Plums, per pound	10
Watermelons, each	40

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*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from Commissaries; no orders taken for delivery.

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal and Colon during the week ending September 17, 1910:

Massachusetts, September 11, from New York, with 27,346 barrels cement for Atlantic Division; 114,610 bags cement for Pacific Division.

Sarnia, September 15, from New York, with one 75-ton wrecking crane for Atlantic Division; 200 barrels crude carbolic acid for manufacture of larvacide.

Turrialba, September 15, from New Orleans, with 295 pieces oak lumber, 4,800 pieces car stakes, 3,800 bales hay, 275 pieces switch stands, 275 pieces switch rods, 22 pieces castings, 2,138 pieces yellow pine lumber, 274 barrels bricks for stock; 155 tons dump car parts for Cristobal shops (for erection).

Metapan, September 16, from New York, with 13 cases files, 3,510 bags oats, 15 cases rubber hose for stock; 15 pieces casting for Central Division; 74 cases triple tape fuse for stock.

Allianca, September 16, from New York, with 15 barrels starch for Ancon hospital; 10 cases books for Department of Civil Administration; 237 pieces car couplers for Mechanical Division; 27 pieces casting for Central Division; 23 barrels fire brick, 2 cases fire brick, 12 cases electrical material for Pacific Division; 40 cases springs, 100 bundles brake shoes for Mechanical Division; 9 barrels brick for Atlantic Division; 22 barrels sea coal facing, 75 cases soap, 13 cases machinery, 100 bundles clothes hampers, 1,835 pieces steel castings, 36 cases tin plate, 31 cases rubber boots, 40 cases metal polish for stock; and a miscellaneous cargo, the whole consisting of 2,733 pieces, weighing 258 tons.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, September 17, 1910. All heights are in feet above mean sea level.

Day and Date	Station.				
	Vigia	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun. Sept. 11	129.2	95.7	49.4	19.4	19.0
Mon. Sept. 12	128.1	94.6	48.8	18.7	18.4
Tues. Sept. 13	131.4	96.6	49.9	18.3	17.8
Wed. Sept. 14	129.8	96.3	50.7	18.5	17.8
Thurs. Sept. 15	127.8	94.3	48.4	18.0	17.8
Fri. Sept. 16	129.4	95.2	48.8	17.6	17.4
Sat. Sept. 17	130.0	95.8	49.2	17.4	17.1
Height of low water	125.0	92.0	46.0		

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending September 28, 1910, (75th meridian time):

Date.	Low.	High.	Low.	High.
	A. M.	A. M.	A. M.	P. M.
September 22	......	5.36	11.57	5.58
			P. M.	
September 23	12.15	6.18	12.40	6.43
September 24	12.59	7.02	1.28	7.30
September 25	1.48	7.50	2.20	8.23
September 26	2.45	8.46	3.20	9.28
September 27	3.52	9.56	4.33	10.48
September 28	5.12	11.20	5.48	......

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company, of the Royal Mail Steam Packet Company, of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Colon	P. R. R.	Saturday	Sept. 17
Advance	P. R. R.	Friday	Sept. 23
Panama	P. R. R.	Thursday	Sept. 29
Allianca	P. R. R.	Wednesday	Oct. 5
Colon	P. R. R.	Tuesday	Oct. 11
Advance	P. R. R.	Monday	Oct. 17
Panama	P. R. R.	Saturday	Oct. 22
Allianca	P. R. R.	Friday	Oct. 28
Colon	P. R. R,	Friday	Nov. 4
Advance	P. R. R.	Thursday	Nov. 10
Panama	P. R. R.	Wednesday	Nov. 16

CRISTOBAL TO NEW YORK.

Allianca	P. R. R.	Thursday	Sept. 22
Ancon	P R. R.	Monday	Sept. 26
Colon	P. R. R.	Thursday	Sept. 29
Advance	P. R. R.	Wednesday	Oct. 5
Panama	P. R. R.	Tuesday	Oct. 11
Allianca	P. R. R.	Monday	Oct. 17
Colon	P. R. R.	Sunday	Oct. 23
Advance	P. R. R.	Saturday	Oct. 29
Panama	P. R. R.	Friday	Nov. 4
Allianca	P. R. R.	Thursday	Nov. 10
Colon	P. R. R.	Wednesday	Nov. 16

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 4th and 25th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Zacapa	U. F. C.	Thursday	Sept. 15
Clyde	R.-M.	Saturday	Sept. 17
Almirante	U. F. C.	Thursday	Sept. 22
Prinz Aug. Wilhelm	H.-A.	Saturday	Sept. 24
Santa Marta	U. F. C.	Thursday	Sept. 29
Atrato	R.-M.	Saturday	Oct. 1
Metapan	U. F. C.	Thursday	Oct. 6
Prinz Joachim	H.-A.	Saturday	Oct. 8
Zacapa	U. F. C.	Thursday	Oct. 13
Tagus	R.-M.	Saturday	Oct. 15
Almirante	U. F. C.	Thursday	Oct. 20
Prinz Aug. Wilhelm	H.-A.	Saturday	Oct. 22
Santa Marta	U. F. C.	Thursday	Oct. 27
Oruba	R.-M.	Saturday	Oct. 29

COLON TO NEW YORK.

Atrato	R.-M.	Wednesday	Sept. 21
Metapan	U. F. C.	Friday	Sept. 23
Prinz Joachim	H.-A.	Tuesday	Sept. 27
Zacapa	U. F. C.	Friday	Sept. 30
Tagus	R.-M.	Monday	Oct. 3
Almirante	U. F. C.	Friday	Oct. 7
Prinz Aug. Wilhelm	H.-A.	Tuesday	Oct. 11
Santa Marta	U. F. C.	Friday	Oct. 14
Oruba	R.-M.	Monday	Oct. 17
Metapan	U. F. C.	Friday	Oct. 21
Prinz Joachim	H.-A.	Tuesday	Oct. 25

NEW ORLEANS TO COLON.

Abangarez	U. F. C.	Saturday	Sept. 17
Atenas	U. F. C.	Saturday	Sept. 24
Turrialba	U. F. C.	Saturday	Oct. 1
Abangarez	U. F. C.	Saturday	Oct. 8
Atenas	U. F. C.	Saturday	Oct. 15
Turrialba	U. F. C.	Saturday	Oct. 22

COLON TO NEW ORLEANS.

Turrialba	U. F. C.	Thursday	Sept. 22
Abangarez	U. F. C.	Thursday	Sept. 29
Atenas	U. F. C.	Thursday	Oct. 6
Turialba	U. F. C.	Thursday	Oct. 13
Abangarez	U. F. C.	Thursday	Oct. 20
Atenas	U. F. C.	Thursday	Oct. 27

COLON TO BARBADOS, CALLING AT TRINIDAD.

Clyde	R.-M.	Tuesday	Sept. 27
Atrato	R.-M.	Tuesday	Oct. 11

The next sailing of the Leyland Line will be as follows: *Barbadian*, on or about September 23, for New Orleans, via Kingston, Ja.

Hamburg-American steamers leave for New York at 10 a. m., and for Port Limon every Tuesday or Wednesday.

Royal Mail steamers leave for New York on alternate Wednesdays at 10 a. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans leave on Thursday at 3 p. m., and for New York on Friday at 10 a. m.

Sailings of the French Line (Cie Generale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3d and 20th of each month.

CANAL RECORD

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The Canal Record

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THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Testing Stoney Gate Valves.

Tests of the Stoney gate valves that will control the flow of water through the culverts of the locks will be made at Gatun. Two concrete piers have been erected on the floor of the west chamber of the upper locks on which the valves will be erected in horizontal position for the first four tests. The piers are about six feet high permitting free access for the inspection of the roller trains. The gates are of steel and are 10 feet 8 inches wide by 18 feet 10 inches high, made to close a hole 8 by 18 feet. The points to be determined by the first four tests are:

(1) The friction developed by the roller trains when the valve is moved under a superimposed load equivalent to the water pressure against the valve under operating conditions. (2) The deflection of the valves under loads equivalent to operating pressures and the effect of the deflection upon the rollers to determine whether it will be necessary to provide rocker bearings on ends of valves. (3) The effect of an eccentric pull on the gates to simulate the conditions if the valve stem is not attached to the gate on the axis through the center of gravity. (4) The effect of wear on the rollers and roller train tracks for continuous operation under a working load.

Points 1 to 4 will be determined by assembling the valve and roller trains in a horizontal position and loading the valve with pig iron or rails in increasing amounts to equal the pressure due to varying water heads up to 60 feet. A wire rope run through each end of the gates through snatch blocks to a hoisting engine will permit of the valve being operated at will. After points Nos. 1, 2 and 3 are determined the valve will be moved backward and forward through the full range of 36 feet at the rate of 10 feet per second for several days, the valve to be loaded with 270 tons, the equivalent of a 60-foot water head on a surface 8 by 18 feet.

Three other tests will be made to determine: (5) The efficacy of the sealing devices, particularly the spring side seals, under water pressure, and the water tightness of the uncaulked skin plates and rivets. (6) The effect on the spring side seals when gate is operated. (7) The initial force required to break the water seals and open the valves about one foot. In test No. 5 it is proposed to install the two sets of valves in the two upper valve chambers in the center wall culvert and to fill the culvert between the valves with water and observe the leakage under varying heads. After the valves have been installed, and prior to filling the culvert with water, point 6 can be determined by raising and lowering the valve a few times. Test 7 will be deferred until the operating machinery has been installed.

Excavation in Central Division.

On September 23rd, 49 shovels in the Central Division excavated 68,878 cubic yards of rock and earth in a working day of eight hours, an average per shovel of 1,406 cubic yards for the day. During this time the shovels were under steam 392 hours and were actually at work 276 hours and 20 minutes, and waiting for cars 83 hours and 45 minutes, the rest of the time being lost in mining, cleaning track, repairing shovels, cleaning dippers, etc. The number of shovels working and the amount of material excavated in the different construction districts on this date were as follows:

	Shovels	*Cu. Yds.*
Empire construction district.......	20	26,548
Culebra construction district.......	18	28,918
Chagres construction district.......	9	11,100
Pedro Miguel construction district..	2	2,312

This material was loaded on 2,494 Lidgerwood flats, 326 large Western and Oliver dump cars, and 1,595 small Western and Oliver dump cars.

The amount of material disposed of at the principal dumps on this day was as follows:

	Cu. Yds.
Tabernilla........................	7,980
P. R. R. relocation...............	9,550
Miraflores........................	12,540
Balboa............................	16,530
Gatun.............................	6,816

The remainder of the material was mostly disposed of in small dumps bordering the Chagres River.

On September 17th, 21 shovels in the Empire construction district of the Central Division excavated 26,611 cubic yards, principally rock, in the working day of eight hours, an average per shovel of 1,267 cubic yards. During this period, the shovels were under steam 168 hours and were actually at work 129 hours and 15 minutes, and waiting for cars 18 hours. The other delays were due to mining, cleaning track, repairing shovel, moving back, etc.

Feeding Calfalfa at the Corrals.

A shipment of nine tons of calfalfa for feeding in the Commission corrals at Ancon and Culebra was received from San Francisco on the steamer *City of Para*, which arrived at the port of Balboa on September 18. Calfalfa is a meal made of finely ground alfalfa and is used as a feed for horses and cattle. A trial shipment was received at the Ancon corral some time ago and gave satisfactory results. It is exceedingly nutritive, and is fed to the animals in the corral by wetting and mixing it with the regular feed of oats. Its cost is about $19 per ton.

Boiler Efficiency With Oil As Fuel.

Tests have been made recently at the Las Cascadas air compressor plant and at the Mount Hope pumping station to determine the economy and efficiency of the boilers, with California crude oil as fuel. These tests are similar to those made at all the large boiler plants in the Canal Zone, a summary of which was published in THE CANAL RECORD of June 8, 1910.

At Las Cascadas, the test was made on six return fire-tube boilers, and consisted of two trials of 7½ and 9 hours, respectively. The first trial was made while the plant was operating under normal running conditions, while during the second, an attempt was made to increase the economy and efficiency by decreasing the amount of air supplied to the furnace for combustion, closer regulation of the oil and steam used by the burners, and by operating the boilers at their full rated horsepower. The second trial showed an economical adjustment of the burners (two to each boiler), which was verified by the high evaporation of water per pound of combustible, and very little improvement could therefore be made in this respect. The increase in economy was obtained by decreasing the amount of air supplied to the furnace for combustion, by closing the ash pit doors and dampers, and by operating the feed water pump at a constant speed, keeping about one and one-half gages of water in the boilers throughout the test. Some results of the test are as follows:

	Trial 1.	Trial 2.
Horsepower developed.........	1,442.58	1,507.82
Equivalent evaporation from and at 212 degrees F. per pound of oil, ...lbs.	13.931	14.404
Equivalent evaporation from and at 212 degrees F. per pound of combustible,..............lbs.	14.154	14.635
Cost of fuel for evaporating 1,000 pounds of water under observed conditions............	$0.2528	$0.2437
Cost of fuel for evaporating 1,000 pounds of water from and at 212 degrees F...............	$0.2365	$0.2287

At Mount Hope the test was made on one locomotive type boiler, the first trial being to determine the economy and efficiency under normal running conditions. A comparative trial was then made for the same length of time (16 hours), to see if an increase in economy could be obtained by decreasing the amount of air supplied to the furnace for combustion, carrying a boiler pressure of about 80 pounds gage, 1½ gages of water, and by closer regulation of the oil and steam used by the oil burners. The results of the

NOTES OF PROGRESS.

(*Continued.*)

second test show that a considerable increase over the first test, both in efficiency and economy, was obtained, principally by decreasing the supply of air to the furnace, close regulation of the oil burners, and carrying a higher boiler pressure. The results for the test were as follows:

	Trial 1.	Trial 2.
Horsepower developed.........	77.96	86.87
Equivalent evaporation, from and at 212 degrees F., per pounds of fuel, as fired, ...lbs.	10.75	13.11
Equivalent evaporation, from and at 212 degrees F., per pound of combustible,.....lbs.	10.99	13.40
Cost of fuel for evaporating 1,000 pounds of water under observed conditions............	$0.3365	$0.2759
Cost of fuel for evaporating 1,000 pounds of water from and at 212 degrees F...............	$0.3064	$0.2513

Building Improvements.

The addition to the Empire schoolbuilding was begun on Friday, September 23, and the work will be advanced as rapidly as possible. The improvements will not be completed prior to the opening of school on October 3, but the plans for beginning school work on that date will be carried out. It is proposed to use the old part while building operations are going on.

The work of converting building No. 2 at Miraflores, formerly a French labor barrack, 34 by 50 feet in size, into a commissary building is in progress. It will be ready for occupancy in about three weeks.

The construction of an extension to the car repair shed at Pedro Miguel was begun this week. It will be 286 feet long by 36 feet wide.

Lock Building in Pacific Section.

A new record was established in the locks of the Pacific Division last week, when 13,390 cubic yards were laid at Pedro Miguel and 5,048 cubic yards at Miraflores, a total of 18,438.

The auxiliary plant at Miraflores consists of eight concrete mixers, two 2-cubic yard, five ½-cubic yard, three of which were recently received from the States, and one ⅓-cubic yard. Two of the ½-yard mixers are now in the shop undergoing repairs. A part of the output of the 2-cubic yard mixers is used in the center wall construction and is carried into the lock in a Western dump car, eight yards at a time. The remainder of the concrete from these mixers is carried in buckets to where the east berm crane can dump it into the east side wall. Two of the small auxiliary mixers are situated near the east side of the forebay, close enough to the edge of the lock to permit the output being sent down a chute into the head wall. As soon as the work at that point is completed they will be removed to a similar position near the west side of the forebay to build the head wall of the west chamber. The other small mixers are employed in extending the floor and culvert section in the east chamber.

The east head wall is nearly finished; a section of the east side wall is ready for the culvert forms, and a piece of the batter or foundation section of the center wall is in place. Before operations on the west side wall can be begun, a sloping ledge of rock and earth extending along the west chamber will have to be removed, and steam shovels will be set at this work some time during the coming month. This will necessitate taking up the construction track that now extends along this ledge down into the lock, but a new track into the lock directly out of the north forebay, will be laid.

The record of concrete laid at the Miraflores Locks for each of the six 8-hour working days in the week ending September 24, and the total to that date inclusive, follows:

Date	Auxiliary Plant.				
	½-Cubic yard mixers.	⅓-Cubic yard mixer.	2-Cubic yard mixers.	Large stone.	Total.
	Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu Yds	Cu. Yds.
Sept. 19	400	12	344	......	756
Sept. 20	476	....	456	15	947
Sept. 21	394	....	506	15	915
Sept. 22	523	....	384	......	907
Sept. 23	348	....	440	30	818
Sept. 24	325	....	366	14	705
Total.	2,466	12	2,496	74	5,048
Previously reported	....	....	....	409	20,098
Grand total..	....	....	....	483	25,146

The record of concrete laid at the Pedro Miguel Locks for each of the six 8-hour working days in the week ending September 24, and the total to that date, inclusive, follows:

Date.	Cubic Yards.			
	Construction plant.	Auxiliary plant.	Large stone.	Total.
Sept. 19.......	1,918	....	10	1,928
Sept. 20.......	1,976	104	7	2,087
Sept. 21.......	2,472	44	10	2,526
Sept. 22.......	2,140	126	10	2,276
Sept. 23.......	2,074	160	40	2,274
Sept. 24.......	2,178	100	21	2,299
Total	12,758	534	98	13,390
Previously reported.....	....	....	3,168	289,815
Grand total....	....	....	3,266	303,205

Concrete in Gatun Locks.

The record of concrete laid in Gatun Locks by the construction plant of eight mixers and four cableways, and the auxiliary plant of two mixers, during the week ending September 24, and the grand total to that date, follow:

Date.	Concrete placed.	Large stone.	Hours worked.	No. of mixers	Total.
	Cu. Yds.	Cu. Yds.			Cu. Yds.
Sept. 19	2,798	333	90:30	8	3,131
Sept. 20	2,572	267¾	88:00	8	2,839¾
Sept. 21	2,706	303	96:00	10	3,009
Sept. 22	2,754	370½	96:20	8	3,124½
Sept. 23	2,976	323¾	98:00	8	3,299¾
Sept. 24	2,186	232¼	74:40	8	2,418¼
Total.	15,992	1,830¼	543:30	......	17,822¼
Previously reported	....	....	....	......	727,413¾
Grand total..	....	....	....	......	745,235½

The construction plant was shut down on September 24, from 7.18 to 9.44 a. m., and the auxiliary plant from 7.05 to 9.45 a. m., on account of a lack of water due to a break in the main.

No more assignments will be made to the bachelor quarters in the Tivoli section, Ancon, known as house No. 70, in view of the proposed conversion of the building into family quarters.

NEW STEAMSHIP SERVICES.

New Line Between San Francisco and Balboa, and New Service of Old Line.

A new line of steamers will begin a fortnightly service between San Francisco and Balboa (Panama), with San Pedro (Los Angeles) as a port of call, on October 1, when the first vessel will sail from San Francisco. This is due at Balboa on October 15. The ships will be operated by the California and Atlantic Steamship Company, Bates and Chesebrough' agents, San Francisco.

The Panama Railroad Company has granted to the new line regular through billing privileges on coastwise traffic on the same terms and conditions as those held by the Pacific Mail Steamship Company. The principal concessions thus made are 70 per cent of the through freight rate on coastwise traffic, and the waiving of wharfage, craneage, lighterage, and basin charges at Balboa on such traffic. Coal will be sold the ships at Balboa at the cost price delivered in Colon, plus $2.25 freight charge per ton for haulage across the Isthmus.

The steamships chartered for the Pacific service are the *Mackinaw*, *George W. Fenwick*, and *Stanley Dollar*, all steel, single screw steamers. The *Mackinaw* will be equipped with cold storage space for 200 tons, with the expectation that arrangements may be made to supply California fruits and vegetables to the Isthmian Canal Commission.

In order that the ships on the Pacific may not have to depend entirely on the Panama railroad ships for carrying freight from the States to Colon, the steamer *San Mateo* has been chartered by the new company to carry freight from Philadelphia and New York to Colon, and returning, to take and deliver freight at New Orleans and Charleston. The itinerary will take 45 days.

The Pacific Mail Steamship Company will establish a direct freight service between San Francisco and Balboa with sailings from both ports every 15 days. The first ship in this new service will leave San Francisco on September 30, and leave Balboa on October 23. The present service, with calls in Central America and Mexico, will be continued with ships sailing every ten days.

An article outlining an improvement in terminal facilities at Balboa was published in THE CANAL RECORD of September 14. These improvements will be hastened as much as possible in order that the increased business at Balboa may be handled expeditiously. The remodeling of the steel pier and the installation on it of better cranes will be begun at once, and the new cranes will be contracted for in such time that they may be installed as the work on the pier advances. Work on the concrete dock that is to be constructed south of the present sand dock will be pushed as much as possible, but it is not likely that it can be completed within nine months.

Porto Bello Rock Crusher.

A statement of the work done at Porto Bello crusher, by days, for the week ending September 24, follows:

Date.	Hours worked.	Cubic Yards.
September 19..................	6:45	2,091
September 20..................	9:05	3,470
September 21..................	9:28	1,931
September 22..................	8:02	2,976
September 23..................	9:35	2,843
September 24..................	8:37	3,508
Total........................	51:32	16,819

ARREST AND BAIL.

Uniform Practice Adopted by the District Courts.

A uniform practice in the issuance of warrants of arrest and in the admission of defendants to bail was agreed upon by the district judges in conference with the Head of the Department of Civil Administration on September 10. In order that the rules may be carried out expeditiously telephones have been placed in the houses and offices of the district judges giving direct communication with the police stations. The rules follow:

(1) In all misdemeanor cases in which the district courts have original jurisdiction, when the arrest is by warrant, said warrant shall state the bail which may be given by defendant, or the cash deposit in lieu thereof which he may make to secure his appearance.

(2) In misdemeanor cases in which the district courts have original jurisdiction, when the arrest is without a warrant, between the hours of 6 a. m. and 10 p. m., if the defendant expresses a desire to be admitted to bail, the police officer responsible for his detention shall immediately communicate with the district judge of the district giving the nature of the alleged offense, and the district judge shall immediately thereupon fix the amount of the defendant's bail, and direct in what manner same may be taken. If upon any arrest without a warrant on a misdemeanor charge between the hours of 6 a. m. and 10 p. m., the district judge cannot be located, and upon any arrest upon a misdemeanor charge without a warrant between the hours of 10 p. m. and 6 a. m., the bonded police officer in charge of the station where the defendant is held is authorized to accept from the defendant cash deposit in lieu of bail in said case, to insure defendant's appearance before the proper district judge at the next sitting of the district court, according to the classification of misdemeanor offenses and bail thereon as follows:

Misdemeanor.	*Bail may be taken in sum not exceeding.*
Assault	$ 25
Assault and battery	125
Carrying concealed weapons	50
Cruelty to animals	50
Disorderly conduct	50
Disturbing the peace	50
Intoxication	25
Intoxication and disorderly conduct	125
Petit larceny	125
Lewd and lascivious cohabitation	25
Loitering	10
Malicious mischief	125
Selling liquor without a license	125
Unlawful possession of weapons	10
Carrying abroad weapons without permit	10
Vagrancy	15
Violating license regulations other than liquor	10
Violating sanitary regulations	25
Minor misdemeanors not herein enumerated	25

(3) In the more serious cases of misdemeanor arrests where defendants desire to give bail, and the sum is not provided for in the above classification, the arresting or commanding officer of police shall communicate with the district judge of his district at the first possible moment after the arrest is made and said judge shall thereupon fix the amount of bail and direct in what manner same may be taken.

(4) In all bailable felony cases where the defendant desires to give bail, the arresting or commanding police officer shall, at the earliest practicable moment, communicate with the district judge of the district wherein the arrest is made, advising said judge of the arrest and character of the offense, and said judge will thereupon fix the amount of bail the defendant may give, if any, and direct how the same shall be taken, or shall direct such other action as may seem to him proper.

(5) Every cash deposit taken by any police officer in lieu of bail must be promptly delivered to the district judge having jurisdiction of the offense for which such cash deposit was taken to insure the defendant's appearance.

Obituary.

Fred B. Haven died at Colon Hospital on September 22, 1910. He was 33 years of age, a widower, and had lived on the Isthmus five years, residing at Empire. His father, C. C. Haven, lives at Port Orange, Fla.

William Siegle, an employe of the Atlantic Division, died at Colon Hospital on September 23, 1910. He was 27 years of age, and had lived on the Isthmus, at Colon, for seven months. His wife, living at Colon, survives him. Death was caused by an accident while he was at his work at Cristobal dry dock. He was cutting wedges at a saw and a piece of wood flying from the saw struck him on the chest directly over the heart. He died within three hours after the accident.

White Slave Law in Canal Zone.

The Act of June 25, 1910, forbidding the transportation in interstate commerce of women and girls for immoral purposes, known as the White Slave Traffic Act, applies to the Canal Zone by special provision of Section 7 which says—"The term 'Territory' as used in this Act, shall include the district of Alaska, the insular possessions of the United States, and the Canal Zone."

The law provides in part as follows:

That the term "interstate commerce," as used in this Act, shall include transportation from any State or Territory or the District of Columbia to any other State or Territory or the District of Columbia, and the term "foreign commerce," as used in this Act, shall include transportation from any State or Territory or the District of Columbia to any foreign country and from any foreign country to any State or Territory or the District of Columbia.

Section 2. That any person who shall knowingly transport or cause to be transported, or aid or assist in obtaining transportation for, or in transporting, in interstate or foreign commerce, or in any Territory or in the District of Columbia, any woman or girl for the purpose of prostitution or debauchery, or for any other immoral purpose, or with the intent and purpose to induce, entice, or compel such woman or girl to become a prostitute or to give herself up to debauchery, or to engage in any other immoral practice; or who shall knowingly procure or obtain, or cause to be procured or obtained, or aid or assist in procuring or obtaining, any ticket or tickets, or any form of transportation or evidence of the right thereto, to be used by any woman or girl in interstate or foreign commerce, or in any Territory or the District of Columbia, in going to any place for the purpose of prostitution or debauchery, or for any other immoral purpose, or with the intent or purpose on the part of such person to induce, entice, or compel her to give herself up to the practice of prostitution, or to give herself up to debauchery, or any other immoral practice, whereby any such woman or girl shall be transported in interstate or foreign commerce, or in any Territory or the District of Columbia, shall be deemed guilty of a felony, and upon conviction thereof shall be punished by a fine not exceeding five thousand dollars, or by imprisonment of not more than five years, or by both such fine and imprisonment, in the discretion of the court.

Section 3. That any person who shall knowingly persuade, induce, entice, or coerce, or cause to be persuaded, induced, enticed, or coerced, or aid or assist in persuading, inducing, enticing, or coercing any woman or girl to go from one place to another in interstate or foreign commerce, or in any territory or the District of Columbia, for the purpose of prostitution or debauchery, or for any other immoral purpose, or with the intent and purpose on the part of such person that such woman or girl shall engage in the practice of prostitution or debauchery, or any other immoral practice, whether with or without her consent, and who shall thereby knowingly cause or aid or assist in causing such woman or girl to go and to be carried or transported as a passenger upon the line or route of any common carrier or carriers in interstate or foreign commerce, or any Territory or the District of Columbia, shall be deemed guilty of a felony and on conviction thereof shall be punished by a fine of not more than five thousand dollars, or by imprisonment for a term not exceeding five years, or by both such fine and imprisonment, in the discretion of the court.

Section 4. That any person who shall knowingly persuade, induce, entice, or coerce any woman or girl under the age of eighteen years from any State or Territory or the District of Columbia to any other State or Territory or the District of Columbia with the purpose and intent to induce or coerce her, or that she shall be induced or coerced to engage in prostitution or debauchery, or any other immoral practice, and shall in furtherance of such purpose knowingly induce or cause her to go and to be carried or transported as a passenger in interstate commerce upon the line or route of any common carrier or carriers, shall be deemed guilty of a felony and on conviction thereof shall be punished by a fine of not more than ten thousand dollars, or by imprisonment for a term not exceeding ten years, or by both such fine and imprisonment, in the discretion of the court.

Sections 5 and 6 provide for procedure in prosecutions under the Act, and place upon the Commissioner General of Immigration the duty of receiving and centralizing information concerning the procuring of women for purposes of prostitution.

Missing Man.

Any one having information regarding the whereabouts of Haymond Brice Collins, 18 years of age, who is supposed to have left his home in Pennsboro, West Va., three years ago to come to Panama, is requested to communicate with the American Legation, Panama.

Cold Storage Prices.

There are no changes in the prices of cold storage articles from those quoted in last week's isssue of THE CANAL RECORD.

LABOR FORCE AND QUARTERS IN AUGUST.

On August 31, there were 35,867 employes actually at work on the Canal and the Panama railroad, and of this number, 29,950 were Canal employes. The gold force on the Canal work, composed almost entirely of white Americans, was 4,445. No labor recruiting was necessary during the month.

The report of the Chief Quartermaster for August shows that the number of family quarters occupied by "gold" employes was 1,708, which is 25 more than in July, and the occupants numbered 5,180, an increase of 77. Of this number, 1,756 were women, and 1,718 children. Bachelor quarters occupied by "gold" employes numbered 1,878 and the occupants numbered 3,282, of whom 121 were women. The family quarters, occupied by European laborers numbered 281, and the occupants, 903; bachelor quarters, 116, and the number of occupants, 5,610. The family quarters occupied by West Indians numbered 1,075, and the occupants, 3,564; bachelor quarters, 260, and the number of occupants, 5,077.

A statement of the force actually at work on August 31, follows:

DEPARTMENT.	Monthly.	Artisans.					European Laborers.		West Indian Laborers.					Total Silver.	Total Gold.	Grand Total.
		44 cents.	32 cents.	25 cents.	20 cents.	16 cents.	20 cents.	16 cents.	20 cents.	16 cents.	13 cents.	10 cents.	7 cents.			
Const'ct'n and Eng'r'ng.	4,194	15	30	275	654	2,586	3,237	1.911	107	471	3,200	3,770	279	20,729	3,356	24.085
Civil Administration	163	..	..	2	4	18	......	......	...	.....	......	5	....	192	301	493
Sanitation	697	..	..	2	3	2	3	2	...	.....	5	363	8	1,085	395	1,480
Quartermaster's	1,020	4	3	70	165	172	295	47	27	.....	15	1,021	10	2,849	226	3,075
Subsistence	635	..	..	1	1	......	......	......	...	.....	......	......	....	637	60	697
Disbursements	8	..	..	....	.....	......	......	......	...	.....	......	......	....	8	24	32
Examinat'n of Accounts.	5	..	..	....	.....	......	......	......	...	.....	......	......	....	5	83	88
Totals	6,722	19	33	350	827	2,778	3,535	1,960	134	471	3,220	5,159	297	25,505	4,445	29,950

Panama railroad force, 3,298; Panama railroad relocation force, 1,603; Panama railroad commissary force, 1,016. Total, 5,917. I. C. C. force, 29,950. Grand total, 35,867.

COMMISSION HOTELS.

A Year at the Hotels and Labor Messes.

The annual report of the Subsistence Department of the Isthmian Canal Commission for the fiscal year ending June 30, 1910, shows that 18 hotels, in addition to the Hotel Tivoli, 19 European laborers' messes, and 20 common laborers' kitchens were in operation, an increase of one hotel, and a decrease of one kitchen, as compared with the previous fiscal year.

The total revenue derived from the line hotels, messes and kitchens during 1909-10 was $1,350,658.05, a decrease of $168,620.08, as compared with the preceding year. The total expenses were $248,313.71, a decrease of $46,602.18 from the year 1908-09. The revenues fell off 11 per cent, but the expenses fell off 15.7 per cent, the percentage of expense to revenue being one per cent less for 1909-10 than for the previous year. The expense for salaries and wages was $191,438.11, as compared with $236,955.52 for 1908-09, a decrease of 19.5 per cent. The proportion of pay roll to revenue was 14.1 per cent, as compared with 15.5 per cent for the year before a decrease of 1.4 per cent.

The total number of meals served at Commission hotels was 2,176,451. The cost of supplies was 24.87 cents and the expense was 6.23 cents a meal, an increase in cost of supplies of 1.33 cents a meal, and a decrease in expense of 0.69 cents a meal, making a total increase of 2.02 cents a meal, which has gone into food, and represents a total increase of $43,964.31 in food supplies, as compared with the preceding year.

The total number of rations furnished in European laborers' messes was 1,092,487, which cost 30.18 cents a ration for food, and 6.66 a ration for expense. The number of rations served decreased by 78,690; the food cost decreased 0.77 cents a ration, and the expense decreased 0.60 cents a ration. The number of rations served in the common laborers' kitchens was 781,746 at a cost of 22.66 cents each for food, and 4.63 cents each for expense. The number of rations showed a decrease of 616,746, as compared with the previous year. The cost of supplies was 0.14 cents a ration greater, but the cost of service was 0.09 cents a ration less. There has been a constant decrease in the number of laborers taking their meals in Commission kitchens, the attendance in June, 1910, being about 50 per cent less than for the corresponding month in 1909. The average daily attendance during June, 1910 in the line hotels was 1,915; in messes, 3,178, and in kitchens, 1,496.

The following table shows the relative value of food consumed each day by each person in the Commission hotels, the costs being computed by taking periods in each month and averaging them. The actual cost would be about six per cent less.

Article.	*Cost—Cents.*
Meats, fresh	25.92
Fruits and vegetables, fresh	10.66
Miscellaneous supplies	6.93
Butter	6.18
Eggs	5.91
Fruits and vegetables, canned	5.40
Meats, cured	4.47
Bread	2.73
Milk	2.37
Ice Cream	2.25
Sugar	2.19
Tea, coffee and cocoa	1.71
Flour	1.71
Meats, canned	1.05

In addition to the foregoing, the consumption of ice amounted to 3.45 pounds each day.

The average weight of the ration supplied each person daily in the European laborers' messes was found to be approximately 4.91 pounds, and the average value 29.58 cents. This does not include 1.38 pounds of ice consumed per capita each day, which cost 0.56 cents. The average weight of the ration supplied each person daily in the laborers' kitchens was found to be approximately 4.41 pounds, with a value of 22.26 cents. It is a coincidence that the net weight of the ration furnished the European laborer is exactly equal to the gross weight of the United States Army garrison ration, and the net weight of the ration furnished the negro laborer is exactly equal to the gross weight of the United States Army field ration.

The year's operations showed a loss on hotels of $22,168.71, a profit on the European laborers' messes of $34,504.86, and a profit on the laborers' kitchens of $21,211.97. The operation of the Hotel Tivoli showed a profit for the year of $4,574.23.

Concrete in Gatun Spillway.

The amount of concrete placed in the Spillway of Gatun Dam during the week ending September 24, and the total placed to that date, are shown in the following statement:

Date.	Cubic Yards.		
	Concrete	Large rock.	Total.
September 19	254	....	254
September 20	250	....	250
September 21	260	....	260
September 22	222	....	222
September 23	104	....	104
September 24	150	....	150
Total	1,240	....	1,240
Previously reported	....	....	92,990
Grand total	....	....	94,230

The plant used one mixer and worked 46 hours.

Ancon Rock Crusher.

A statement of the rock crushed at Ancon quarry during the weeks ending September 17, and September 24, respectively, follows:

Date.	Hours worked.	Cubic Yards.
September 12	8.45	2,730
September 13	7:30	3,305
September 14	6:55	2,055
September 15	5:10	1,785
September 16	8:00	2,280
September 17	7:45	2,695
Total	44:05	14,850

Date.	Hours worked.	Cubic Yards
September 19	8:00	2,790
September 20	8:25	2,545
September 21	7:15	2,815
September 22	8:25	3,015
September 23	7:30	2,970
September 24	8:00	2,805
Total	47:35	16,940

No action has yet been taken on the report of the committee appointed to consider the advisability of requesting the Y. M. C. A. to take over the Washington reading room in the Lincoln House at Colon. The committee reported favorably, but additional information bearing on the subject has been asked for by the superintendent of the Panama railroad, under whose management the room is conducted.

Launch Service to Taboga.

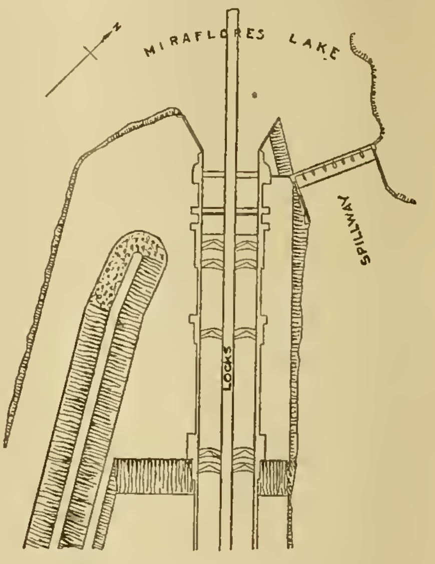
The steamer *Sanidad* leaves the dredge landing at Balboa at 9 o'clock Tuesday, Thursday and Saturday mornings. On the return trip it arrives at Balboa about 4.30 p.m. in time to make connections for the 5.30 train at Panama.

MIRAFLORES SPILLWAY.

Plans for Controlling the Water Level of Miraflores Lake.

Plans have been approved for the spillway by means of which the water in Miraflores Lake, between the locks at Pedro Miguel and Miraflores, will be regulated. The spillway will consist of a straight concrete dam connecting the east wall of Miraflores Locks with the side hill, as indicated in the location plan on this page, with regulating gates of steel mounted on the crest of the dam. The dam will be 432 feet long on the crest and will contain approximately 75,000 cubic yards of concrete. Further details are contained in the drawings reproduced herewith, and in the following abstract of the report accompanying the approved plans:

Proper control of Miraflores Lake involves not only passing the insignificant flow of the tributary streams—Rio Grande, Rio Pedro Miguel, Rio Cocoli, and Rio Caimitillo—but the disposal of the large amount of water which would reach the lake from the higher level of Gatun Lake through Culebra Cut, should an accident permit an unobstructed flow to take place through one of the twin locks at Pedro Miguel.



Location Plan

OF MIRAFLORES SPILLWAY.

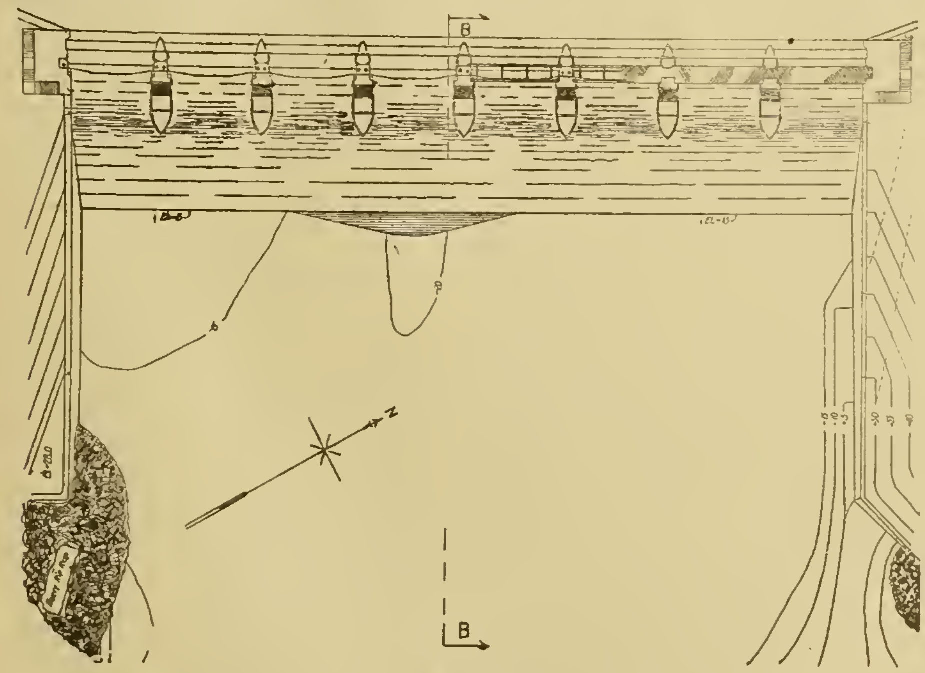
SCALE 1 : 12000

Careful studies have been made of the quantity which may reasonable be expected to flow into Miraflores Lake if this contingency should arise, and the spillway proposed, with a capacity at maximum permissible lake level of about 92,000 second feet will dispose of the probable discharge without damage to the earth dams. The quantity flowing into the lake is not susceptible to precise determination, results ranging from 75,000 second feet to 116,000 second feet being obtained, with the true value probably between 90,000 and 100,000 second feet, but if it is found that the flow is greater than can be passed by the spillway without raising the lake to an undesirable level, the culverts of the Miraflores Locks can be utilized. As it is improbable that they would be called on to carry more than 8,000 second feet, and as their capacity will be about 25,000 second feet, no damage should result from such emergency use. The discharge would have to pass the spillway for only the short time occupied in closing the emergency dam at Pedro Miguel. The flow would begin to diminish as soon as the first wicket of the dam should be dropped, and would cease when the closure should be completed.

The maximum level to which Miraflores Lake may be permitted to rise is determined by the lock walls with copings at elevation 58.67 feet above sea level. Allowing a freeboard of 1.5 feet gives a maximum lake level at elevation 57.17.

The spillway consists of approach walls, connecting the dam with the lock on one side and the natural rock hill on the other, the spillway dam, and the discharge channel. The spillway dam will be a straight concrete dam of ogee section with its crest at elevation 38.67 feet above mean sea level, 16 feet below the ordinary level of Miraflores Lake. The crest will be divided into eight bays, each 45 feet wide, by the end abutments and seven intermediate piers and the bays will be closed by rising gates of the Stoney type, in all respects like those designed for the spillway at Gatun. The piers will be so designed that the caissons for closing of gate openings may be used interchangeably at both spillways.

The downstream or ogee face of the dam will be formed by a parabolic curve convex upward, and a circular arc concave upward. The parabolic part is exactly like the corresponding part of the Gatun spillway dam except that the curve is carried a little further. (An article on the dam of the Gatun spillway was published in The Canal Record of September 8, 1909) The overflowing water, will, therefore, adhere whenever the gates are opened six feet or more. The circular part forming the toe, which turns the overfalling stream back to horizontal direction, is of shorter radius than that at Gatun, since this dam is of less height and the presence of a deep pool of water eliminates the necessity of the more gradual return adopted in the former design.

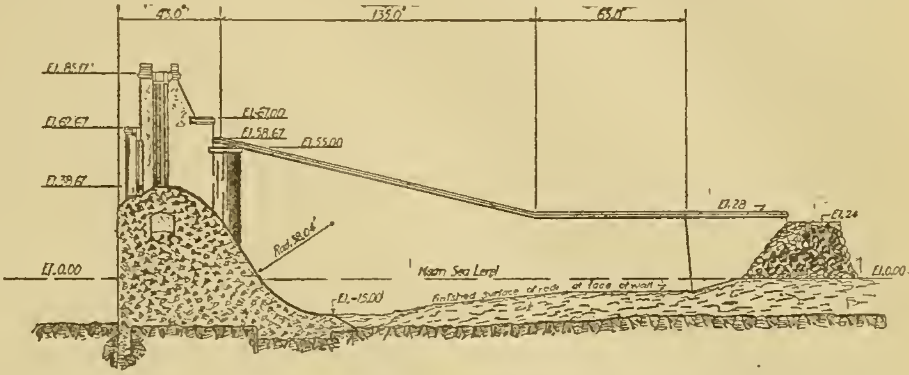


GENERAL PLAN—MIRAFLORES SPILLWAY.
Scale 1 : 125.

It is proposed to install the machinery for operating the crest gates within a tunnel running through the dam from end to end, the machines and the tunnel to be like those in Gatun spillway dam, and the water which may seep in, or leak in at the ends, to be drained out on the downstream side. The best location for the controlling devices has not been determined but can be left for future study.

It is believed that it will be better to regulate the lake ordinarily by means of the crest gates on the spillway dam, either by opening several gates for only a few inches so as to discharge thin streams, which can do no harm even though they do not adhere to the masonry, or by opening a single gate wide at such intervals and for such lengths of time as may be necessary to hold the lake within the permissible limits. The latter method is perhaps to be preferred as it gives the operators experience in working and caring for their machinery and furnishes an opportunity to examine the upstream faces of the gates.

As the flood which would be thrown into Miraflores Lake by the breaking down of a lock at Pedro Miguel would raise the lake level at the rate of about 0.1 foot per minute, it is evident that the spillway gates must be opened promptly after the occurrence of such an accident in order to prevent damage to the earth dam. Automatic self-starters, actuated by float switches, giving thoroughly dependable automatic control, are recommended to be installed at the Miraflores spillway to operate the gates in the event of such a flood. Such apparatus is not, however, to interfere with the ordinary manual control of the motors by which the gates may be moved separately.



SECTION B-B
SHOWING OGEE DAM, WITH PIER AND CHANNEL WALL IN DISTANCE.
Scale 1 : 1000.

Death of a French Canal Chaplain.

The Rev. Father Pius Massi, a Jesuit priest, who was a chaplain in the service of the first French canal company, died at St. Francis Hospital in New York on September 8, at the age of 77. He was born in the Vatican, his father having been chamberlain at the papal court during the incumbency of Pope Gregory XVI, and received his early education at the Roman College. His first mission was in Quito, Ecuador, and from there he came to Panama. During the ensuing four years he acted as a nurse in yellow fever cases among French canal employes, and officiated at funerals. He was a close friend of Count DeLesseps. In 1883, he went to the United States and after a year of teaching in Boston, joined the Jesuit College at Georgetown University, remaining there until 1890, when he became identified with the work of the church of St. Ignatius Loyola in New York City.

Hebrew Benevolent Society—New Year 5671.

The Canal Record:

Divine service will be conducted at the Sojourners' lodge room, Colon, on Monday evening, October 3, at 6.30 o'clock, and on Tuesday morning, October 4, beginning at 8.30. All Jewish residents of the Canal Zone are cordially invited.

By order,
J. Julius Sasso, *Secretary.*

The use of old cross-ties will be resorted to by the Quartermaster's Department in Ancon for maintaining the supply of kindling to married quarters. Up to recently there had been enough old boxes, and odds and ends from building operations to fill the demand. The ties to be cut up are brought in from the line, and are worthless, having been relaid several times until they have become full of spike holes.

ROMAN CATHOLIC CHURCHES.

Religious Work by Commission Chaplains and Other Priests.

The Roman Catholic churches in the Canal Zone are in the diocese of Panama, and all the property owned by the church is held in the name of the Right Rev. Bishop Junguito. There are seven churches, situated at Ancon, Balboa, Culebra, Empire, Las Cascadas, Gorgona, and Gatun. Although not in the Canal Zone, Colon Hospital is under the Isthmian Canal Commission, and a place has been assigned there for services to be conducted by the Catholic priest who is one of the chaplains. Of the 15 chaplains in the employ of the Commission, three are Roman Catholic priests and a fourth, who works among the Spanish laborers in all parts of the Zone, is an interpreter in the Quartermaster's Department. A general article on church work under the Commission and in the Canal Zone was published in The Canal Record of July 27, 1910, and articles detailing the work of various church organizations were published in subsequent issues.

The first services held by the Roman Catholics under the American régime were conducted in one of the buildings of Ancon Hospital, at present used as a storehouse. In November, 1906, work was begun on the chapel and mass was first celebrated there early in 1907. It is in the hospital grounds near the gate. It will seat 150 people, but the average attendance at the two masses on Sunday is not over eighty. The congregation is largely transient, and no Sunday school is maintained because there are so few children. The Rev. Daniel Quijano is pastor, and in addition has regular work as chaplain at the hospital.

St. Mary's Star of the Sea is the name of the church recently organized at Balboa by the Rev. Henry C. Pouget, formerly a missionary among the Indians of New Mexico. He came to the Isthmus late in 1909, and began organizing the Catholics of Balboa and Corozal into a regular congregation. On January 1, 1910, a plot of land 250 by 150 feet was assigned by the Commission for a church building, and work was immediately begun on a temporary meeting house. The main church is now nearing completion. It is a wood structure 66 feet 8 inches by 26 feet, and although not entirely finished, was opened to the public on July 10. The Sunday masses are attended by about 100 people, and arrangements are in progress to hold evening services. The men of the parish have been organized under the name of St. Mary's Club, and the women have formed an altar society, which is active socially. A Sunday school has been organized, but its sessions were suspended recently to be resumed this fall. This church numbers among its congregation residents of Miraflores, Corozal, and new and old Balboa.

The energies of the congregation of the Church of the Holy Redeemer at Culebra and of the pastor, the Rev. Henry Collins, are centered at the present on the construction of a reinforced concrete church on the edge of Culebra Cut. The building was described in The Canal Record of August 3. Mass is celebrated in the apse of the building, which was completed first and given a temporary roof in order to accommodate the congregation. It is estimated that the building will cost $30,000 and of this amount, $10,000 have already been expended.

St. Ferdinand's Church at Empire was established in December, 1908, at which time the number of persons attending the services each Sunday averaged 80, and the Sunday school had a membership of 15. The removal of the priest in charge, the Rev. Ferdinand Allot, from residence in Panama to Empire has enabled him to extend the work, so that the average congregation on Sunday mornings is between four and five hundred. This is composed of residents of Empire, Pedro Miguel, and Paraiso, more than 100 Americans among the number, and West Indians from Culebra and Las Cascadas. The Sunday school is in charge of three Sisters of Charity, who come from Panama. The school is divided into three sections, the English Sister having 45 pupils, among them 10 Americans; a Colombian Sister teaches 35 native children, and a French Sister has a class of 20 French children. There is an altar society, divided into two sections; one being composed of American women, which has 30 members, and a West Indian section of 50 members. Sermons are preached in English, French and Spanish. The choir is composed of West Indians. Baptisms in the church average 20 a month. The pastor holds classes for instruction in church doctrine. The average attendance at daily mass, said at 6.15 a. m., is 310. In addition to his duties in connection with the pastorate of St. Ferdinand's Church, Father Allot is visiting chaplain at large for the Commission, and is charged with making visits to the leper asylum at Palo Seco, three days in each month being spent with the patients in that institution. The church building is owned by the Isthmian Canal Commission.

The Commission chaplain at Colon Hospital, the Rev. P. José Volk, has charge of services in three churches, in addition to his duties as chaplain. St. Joseph's Church in Cristobal was organized about a year ago, and has a membership of about 250. Opposite this church is a day and boarding school conducted by the Christian Brothers with an attendance of about forty boys. The instruction is principally in English, but there are also classes in Spanish and other languages. The Church of the Immaculate Conception in Colon has witnessed two thousand baptisms and two hundred marriages in the past five years. In connection with this parish, the Christian Brothers, with a teaching staff of eight, conduct a school which is attended by three hundred boys between the ages of six and fourteen years. Six members of the Sisters of Charity conduct a similar school for girls at which the attendance is about two hundred. At Majagual, near Cristobal, a frame church building has recently been erected and a school has been organized.

Baseball Plans for 1910–11.

The baseball committee, consisting of representatives of the Atlantic and Isthmian Leagues, appointed to consider plans for the coming season, have accepted the conditions attached to the granting of free transportation to players, tentatively approved by the Chairman and Chief Engineer, in accordance with the arrangement published in The Canal Record of August 31. This insures a one-league association, instead of two, and the conduct of organized baseball on the Isthmus strictly in keeping with National League rules.

There will be six teams in the new league, viz., Ancon, Empire, Camp Elliott, Gorgona, Commissary-Subsistence, and Cristobal-Colon. The two latter teams will represent the Atlantic coast, and will utilize the best of the talent comprised in the four-team Atlantic League of last season. It has been decided that all of last year's players must report back to their respective clubs, until regularly released.

The new circuit will have three parks, one each at Ancon, Empire and Colon, and a game will be played at each park on each scheduled date, weather permitting. The season will consist of a series of 25 Sunday and holiday games, beginning with December 18, the first Sunday before Christmas.

A meeting of the representatives of the old leagues will be held at Ancon on November 6, when the new league will be formally organized, officers elected, a constitution adopted, and arrangements made for the season's schedule of games.

A picked team from Ancon played a game of baseball with a picked team from Balboa at the Ancon park on Sunday afternoon, September 25, resulting in a score of 6 to 5 in favor of Ancon.

PERSONAL.

The Hon. Thomas C. Dawson, American Minister to Panama, accompanied by Mrs. Dawson and three children, and Mr. Charles Campbell, Jr., secretary of legation, arrived at Colon on the *Zacapa* on September 23. Mr. Dawson presented his credentials to President Mendoza on Saturday, September 24, and was formally received as Minister.

Mr. R. O. Marsh, secretary of the American legation in Panama and charge d'affaires since the departure of the former Minister, the Hon. R. S. Reynolds Hitt, sailed for New York on the *Ancon* on September 26, accompanied by Mrs. Marsh.

Mr. Thomas L. Clear, accompanied by Mrs. Clear, returned from his vacation in the States on the *Colon*, arriving at Cristobal on September 23.

Family Quarters.

Applications for married quarters on file on September 1, were as follows:

	No. 1* List.	No. 2 List.
Ancon	2	14
Ancon Hospital	....	3
Balboa	....	47 (8)
Corozal	1	25
Cristobal	5	160
Culebra	3	1
Empire	4	3
Gatun	3	133 (54)
Gorgona	5	74 (29)
Las Cascadas-Bas Obispo	4	9 (5)
Miraflores	....	1
Pedro Miguel-Paraiso	5	41 (5)
Porto Bello	1	27
Tabernilla	....	....
Total	33	538 (101)
August 1	30	493 (81)
July 1	19 (2)	525 (84)
June 1	37 (3)	516 (89)

*Persons employed prior to January 1, 1908.

The figures in parentheses show the number of applicants already occupying regular or nonhousekeeping family quarters at stations, other than those at which applications are filed.

Married.

JAMES-RENSHAW—On Saturday evening, September 10, at the home of the bride at the University of Virginia, Julia Wickham Renshaw, daughter of Mrs. Robert Henry Renshaw, to Alfred Randolph James. Canal Zone residence at Corozal.

OFFICIAL CIRCULARS.

Central Division Organization.

OFFICE OF THE DIVISION ENGINEER,
EMPIRE, September 24, 1910.

CENTRAL DIVISION CIRCULAR No. 161:

By authority of the Chairman and Chief Engineer, the following changes in the organization of the Central Division are made, effective September 25, 1910.

Mr. G. A. Greenslade having tendered his resignation, the position of General Superintendent of Construction is abolished. Mr. A. E. Bronk is appointed General Inspector. Mr. W. I. Beam is appointed Chief Clerk.

D. D. GAILLARD, *Division Engineer.*

Railroad Station at New Gatun.

PANAMA RAILROAD COMPANY
OFFICE OF GENERAL SUPERINTENDENT
COLON, R. P., September 23, 1910.

CIRCULAR No. 206:

To All Concerned: Effective with our new time table, September 25, 1910, New Gatun will be opened as a freight and passenger station, and all rates, both freight and passenger, now in effect from Gatun to other stations and vice versa, will also apply to New Gatun, until further notice.

All agents will see that this circular is posted on their bulletin boards for the information of the public.

F. MEARS, *Acting General Superintendent.*

Rainfall from September 1 to 24, Inclusive.

MIDNIGHT TO MIDNIGHT.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	1.09	4	3.42
Balboa	2.17	4	4.20
Miraflores	2.35	5	7.56
Pedro Miguel	2.36	4	5.39
Rio Grande	2.16	22	6.28
Central Section—			
Culebra	1.60	4	6.29
Camacho	1.58	22	7.18
Empire	1.62	9	5.40
Gamboa	2.37	4	*8.48
Alhajuela	3.18	24	16.15
El Vigia	2.60	1	15.78
Gorgona	3.00	4	10.55
San Pablo	3.80	4	12.85
Tabernilla	6.19	4	16.02
Bohio	3.73	4	14.52
Monte Lirio	4.48	5	19.05
Atlantic Section—			
Gatun	2.71	4	10.36
Brazos Brook	3.43	5	9.48
Cristobal	2.19	18	8.04
Porto Bello	1.59	22	†8.80
Nombre de Dios	1.25	17	4.55

*To 12 noon, September 24.
†September 1 to 23.

Misdirected Letters.

Ancon, C. Z., September 28, 1910.

The following insufficiently addressed letters originating in the United States and its possessions have been received in the office of the Director of Posts, and may be secured upon request of the addressee:

Alfoe, George
Bascom, Edwin
Brawshaw, Tom
Burggraf, John J.
Bushnell, C. R.
Casanova, Victor
Caster, Simion R.
Childs, W. H.
Clark, Mrs. Blanch
Crandall, Atmore
Davison, Pool
Geddes, C. R.
Heath, Agnes S.
Howard, Chas. A.
Hubbard, John P.
Hunter, Robert
Jennings (Machinist)
Jones, Miss Annie L.
Kitts, Joseph
Kopke, Mrs. Rudolph
Kunce, A. L.
Lynch, Thomas
Mathews, Capt. James
McCain, Mrs. W. H.
Michel, W. H.
Patterson, C.
Perry, H. E.
Piper, L. W.
Reese, John L.
Rook, Albert
Saint Phalle, Comte de
Shailer, Philip R.
Sittig, Jos. A.
Smiley, T. M.
Smith, Mildred E. G. (2nd class)
Smith, Miss Willie
Stewart, Miss Ethel
Walker, Edw. H.
Wantz, William
Weber, Edwin
Wier, Charles
Williams, Gill

Sale of Building Material.

CULEBRA, C. Z., September 24, 1910.

Sealed proposals will be received at this office until 3 p. m., Saturday, October 1, 1910, and then opened, for the purchase of a miscellaneous lot of building material, viz: Sash, doors, blinds, etc. A list of these articles, showing sizes, etc., can be obtained from this office, or at the offices of the District Quartermasters in the Zone. The material is now stored at the Empire storehouse and is open for inspection. Proposals must cover the entire lot and must be accompanied by a deposit of $50.

Proposals should be mailed to the office of the undersigned in sealed envelope, marked "Proposal for the purchase of miscellaneous lot of building material." The Government reserves the right to accept or reject any or all bids or any part thereof.

R. E. WOOD, *Acting Chief Quartermaster.*

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending October 5, 1910, (75th meridian time):

Date.	Higb.	Low.	High.	Low.
	A. M.	A. M.	P. M.	A. M.
September 29	12.15	6.31	12.45	7.00
September 30	1.28	7.38	1.53	7.00
October 1	2.23	8.32	2.46	8.50
October 2	3.08	9.17	3.30	9.34
October 3	3.48	9.57	4.09	10.13
October 4	4.23	10.35	4.45	10.50
October 5	4.56	11.10	5.17	11.24

Auction of Unclaimed Goods.

PANAMA RAILROAD COMPANY,
OFFICE OF GENERAL SUPERINTENDENT,
COLON, R. P., September 10, 1910.

In order to recover freight and storage charges, the Panama railroad will dispose of the accumulation of over and unclaimed shipments now in its possession, by public auction Wednesday, October 5, 1910, at 9 a. m., sale to be held on dock 11, Cristobal C. Z.

The items to be sold consist of a miscellaneous assortment of wines, liquors, household goods, building material, stationery, groceries, dry goods, machinery and merchandise in general, all of which has been held six months and over in an effort to locate owner.

J. A. SMITH, *General Superintendent.*

Band Concert.

The Isthmian Canal Commission Band will give a concert at Balboa, C. Z., on Sunday, October 2, 1910, at 2 p. m. The program follows:

1 March—*La Guardia Real*.................Alvarez
2 Selection—*A Trip to Japan*.................Klein
3 Concert Number—*Among the Lilies*.........Frey
4 Waltz—*Cupid Astray*.......................Rolfe
5 Overture—*Amazon*.......................Kiesler
6 Medley March—*Put On Your Old Gray Bonnet*.......................Wenrich
7 Sextet from Lucia.......................Donizetti
8 Medley Selection—*Amina*..............La Farge
9 March—*The Annihilator*................Clement

Chas. E. Jennings, *Musical Director.*

The next concert will be given at the Hotel Tivoli, Ancon, on Sunday, October 9, at 7.30 p. m.

Opening of School.

The public schools will open on October 3, at 9 a. m.

At Colon beach brake service will be furnished all children in the first to fourth grades, inclusive. Children above these grades, as heretofore, will furnish their own means of conveyance. The brake will leave Colon Beach schoolbuilding at 8.20 o'clock on the first morning, and thereafter at 8. In the afternoon the brake will leave the Colon Beach building at 12.50.

White children at Mount Hope will attend school at Cristobal. Children living at points between Tabernilla and Gatun, will attend at Gatun. Children above the fifth grade at Tabernilla, and all children at other points between Gorgona and Gatun will attend at Gatun.

School will be held at Las Cascadas until the Empire addition is completed. Children above the fifth grade at Las Cascadas will attend at Empire from the opening. Children at points between Gorgona and Empire will attend at Empire pending decision as to the establishment of a school at Bas Obispo.

Owing to the fact that the Paraiso-Pedro Miguel road cannot be used, school will be opened at Paraiso for grades 1 to 5, inclusive. Children above these grades will be accommodated at either Culebra or Ancon. Grades 1 to 5, inclusive, will be given instruction at Pedro Miguel. Children in grades higher than grade 5 will be accommodated at Ancon. Corozal children will be carried by brake to Ancon. The brake will leave the schoolbuilding at Corozal at 8 o'clock sharp. A teacher will be in charge of this brake.

All high school children living at Culebra and Colon and intermediate points will attend at Gatun. Those living at points between Ancon and Culebra, and those above the first year at Ancon, may elect between Gatun and Ancon. All first year pupils living at Ancon will be accommodated at Ancon. Children attending the Gatun high school will leave their homes on the train arriving at Gatun at 12.40 p. m. All others should leave their homes in time to arrive at school for the opening of the morning session.

The Ancon-Balboa brake service will be continued. The brake will leave Balboa at 8.15.

Where children cannot be provided with school privileges in the grades to which they belong at their own stations, free transportation will furnished on application to the office of the Superintendent of Schools at Ancon.

MEETINGS OF TEACHERS.

White teachers of the public schools will meet at Ancon schoolbuilding on Saturday, October 1, at 3 p. m. Colored teachers will meet at 9 a. m.

Balboa Notes.

Dredging operations are in progress in the channel in front of the sand dock at Balboa. The bottom at this point was originally 25 feet below mean tide, but it has gradually filled with silt until dredging is necessary in order that a tug with its tows may come up to the dock at low water without danger of grounding.

The tug *La Boca* which tows the sand barges between Point Chamé and the Balboa sand dock is uninterruptedly in the service night and day, its stay at the sand bed, or at the unloading dock being limited to the time it takes to connect with the barges. The tug will probably be relieved by the *Miraflores*, when that vessel, now rounding South America, reaches port.

The supply boat *Chamé* is being equipped with a new steam steering gear to take the place of the hand gear formerly in use.

The position of master mechanic at the marine shops has been abolished.

Clapet *No. 1* is on the gridiron at the shipways for a general overhauling. Its steering shafts will be equipped with a sand excluding device.

Civil Service Examinations.

Examinations for the position of civil engineer and superintendent of construction in the Quartermaster's Department at large and typewriter in the Isthmian Canal Service, which were postponed from September 18, will be held on October 2. The civil engineer and superintendent of construction examination will require two days, October 2 and 3. Application blanks for either examination may still be procured by addressing the undersigned.

JOHN K. BAXTER,
Secretary, Isthmian Civil Service Board.

Culebra, C. Z., September 24, 1910.

The following vessels arrived at and departed from the port of Balboa during the week ending September 24:

Arrivals—September 17, *Ecuador*, from Guayaquil; September 18, *City of Para*, from San Francisco; September 19, *Mexico*, from south ports.

Departures—September 20, *City of Panama*, to San Francisco; *Loa* to south ports.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

The meeting of the discussion club held on Wednesday evening, September 21, was led by Geo. R. D. Kramer, the subject being "Exercise." At the meeting of the club to be held on Wednesday evening, September 28, the Rev. A. A. Nellis will lead the discussion on "What Shall We Read?"

The informal "social" held on Thursday evening, September 22, was well attended. The program included piano solos by Mr. Richardson, Arthur Howard, and Mrs. C. O. Carlson; vocal solo by Mr. Kramer; violin duet by Messrs. Demetrio Brid and E. Dow Gilman, with Mrs. E. E. Lee at the piano. Lieut. M. C. Hargraves of London told some incidents in connection with his walk around the world. Ice cream and cake were served. The "social" closed with singing of popular songs, after which Lieut. Hargraves gave several recitations.

Following are the 200 scores bowled thus far during September: Hostetter, 246, 204; Dougherty, 221; Herrington, 211; G. Hayes, 203,213; Cohen, 201; Mengel, 200; Hall, 216,204, 203; Case, 205, 206, 204.

On Saturday evening, September 24, Empire's first team took three games from Culebra's first team by the following scores:

Empire.				Culebra.			
Brown......	167	155	212	Cohen....	199	167	176
Potter......	167	208	185	Herrington	167	167	142
Shaugnessy..	158	161	172	Hostetter..	140	141	159
Pearson.....	176	191	185	Case......	131	138	162
Huson......	175	136	173	Dougherty	180	190	165
Total.....	843	851	927	Total...	817	803	804

EMPIRE.

The meeting of the discussion club held on September 21, was led by A. B. Dickson, the subject being "Our Thoughts."

The following 200 scores were rolled during the week ending September 24: Reed, 205; Brown, 206; Johnson, 208; Gustavson, 205, 201; Potter, 207; McLeod, 214.

Messrs. Pearson, Rouneswell and Smallwood, respectively, are the winners of the class A, B, and C pool tournaments for the month of September. The finals will be played this week.

Empire's second team took two out of three games from Culebra's second team on Saturday night, September 24, by the following scores:

Culebra.				Empire.			
Hall........	135	134	....	Nicodemus	132	146	128
Fleischman..	171	164	116	Goolsby...	152	149	153
Huttlemeier.	139	206	203	Sawtelle...	179	127	203
Hayes......	114	170	167	Giavelli...	139	167	153
Mengel.....	139	145	210	Gustavson.	165	179	152
Koperski............			121				
Total.....	698	749	817	Total...	767	768	789

Cristobal defeated Empire in a game of basketball on Saturday night, September 24; score 31 to 22. Following is the line up: Cristobal—Seaton, Prather, Vifquain, Schwallenberg and Pring. Empire—Leylander, King, Lyon, Seaton, McCullough.

The literary and debating society rendered the following program Friday evening, September 23: Selection, Empire male quartet; reading, "Henry Clay," J. R. McNeil; vocal solo, Miss Roche; address, "The Perfect Tribute," Rev. A. A. Nellis; dance, Miss Roche; vocal solo, Mr. King.

GORGONA.

Gorgona's first team took two out of three games from Cristobal's first team on Saturday night, September 24, following being the scores:

Cristobal.				Gorgona.			
Louch......	204	143	163	Roper.....	172	196	179
Rabbitt.....	159	138	167	Gaedkie...	233	211	127
Collins......	215	160	172	White.....	168	160	138
Thomas.....	131	140	146	Otis......	161	184	179
Bullard.....	179	157	163	Sexton....	245	187	177
Total.....	888	738	811	Total...	979	938	800

A very entertaining moving picture show was given on Friday evening, September 23.

The meeting of the discussion club last week was led by E. A. Putnam of Culebra, his subject being, "What Is Failure?" Twenty men were present.

Monday and Thursday are practice nights for basketball, and a game between miscellaneous teams will be played each Wednesday night.

GATUN.

The next meeting of the discussion club will be held on Friday night, September 30, under the leadership of Mr. Smith. The subject to be discussed is "Fellowship."

The gymnasium classes will meet each week on Monday and Wednesday evenings starting September 26 The work will be corrective and recreative, and all are invited to attend.

The bowling match between the "Martyrs of the Time Office" and the "Y. M. C. A. Pickers" resulted in the latter team taking three straight games, the scores being as follows:

"Martyrs."				"Pickers."			
Kiernan....	158	168	150	Hodges....	186	151	136
Meyers.....	104	94	136	Wolf......	167	176	166
Dalton.....	157	147	140	Teimer....	151	133	156
Tulley......	168	135	132	Warr.....	158	144	134
Durand.....	181	201	174	DeMoll...	156	185	162
Total.....	768	745	732	Total...	818	789	754

On Saturday night, October 1, Gatun's second team will bowl at Culebra, and Culebra's first team will bowl at Gatun.

CRISTOBAL.

The moving picture entertainment on Monday evening, September 19, was attended by a large audience. The pictures of the Wright aeroplane were especially appreciated. Another entertainment of the same character was given on Monday evening, September 26.

The meeting of the discussion club was postponed last week. This week, F. C. Freeman of Culebra will be the leader, taking for his topic "Our Thoughts." All are welcome to attend these informal gatherings.

The membership is advancing favorably in spite of the reduction of force at the P. R. R. shops and dry dock. The membership clock now stands at 424. The I. C. C. team captained by Chambers is in the lead.

The second team from Gorgona took two out of three games from the local second team on Saturday evening, September 24. Following are the scores:

Gorgona.				Cristobal.			
Stoehr......	139	152	153	Barrett....	154	157	158
Stewart.....	152	160	190	Grover.. .	180	162	154
Bordh......	157	166	145	Weston...	157	176	158
Varenkamp..	160	165	162	T. Burns..	177	197	173
Haldeman...	212	156	170	Blackburn.	208	162	135
Total.....	820	799	820	Total...	876	854	778

On Saturday night of this week the Marine Band from Camp Elliott will play at the Cristobal clubhouse. On the same night the Gatun basketball team will play the Cristobal team at Cristobal.

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal, Colon and Balboa during the week ending September 24, 1910:

Ancon, September 19, from New York, with 28,680 barrels cement for Atlantic Division; 85,520 bags cement for Pacific Division.

City of Para, September 20, from San Francisco, with 5 tons calfalfa meal for stock.

Abangarez, September 22, from New Orleans, with 146 rolls cotton duck, 2,582 bales hay, 2,747 pieces yellow pine lumber, 38 pieces oak lumber for stock; 44 pieces oak lumber for Mechanical Division; 20 sacks corn, 13 sacks wheat for Superintendent, Ancon Hospital; 348 tons dump car parts for Cristobal shops (for erection).

Zacapa, September 23, from New York, with 11 bundles wire for stock; 1 locomotive crane for Atlantic Division.

Colon, September 23, from New York, with 11 cases injectors, 25 cases paper napkins, 15 bundles wire, 50 cases paint, 12 kegs hardware, 30 bundles strawboard 27 barrels rock salt, 50 pieces switches, 12 rolls leather, 435 pieces steel castings, 9 barrels cable grease, 17 barrels non-fluid oil, 85 cases lanterns, 10 coils lead pipe, 11 cases torpedoes for stock; 12 cases stoves, 7 cases electrical material, 1 earth spreader for Atlantic Division; 13 pieces machinery, 7 cases machinery for Pacific Division; 29 bundles castings, 791 pieces castings, 150 pieces car springs for Mechanical Division; 10 pieces iron forgings, 63 pieces steel castings for Central Division; and a miscellaneous cargo, the whole consisting of 2,127 packages, weighing 285 tons.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, September 24, 1910. All heights are in feet above mean sea level.

Day and Date	Station				
	Vigia	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun. Sept. 18...	129.0	95.4	49.2	17.5	17.0
Mon. Sept. 19..	129.8	95.6	48.1	17.1	16.8
Tues. Sept. 20..	134.0	98.5	52.8	18.1	17.1
Wed. Sept. 21..	132.3	97.6	52.6	18.7	17.5
Thurs. Sept. 22.	129.5	95.5	49.8	18.7	17.6
Fri. Sept. 23...	129.1	95.3	49.4	18.1	17 6
Sat. Sept. 24...	130.9	96.5	50.5	17.8	17.4
Height of low water.........	125.0	92.0	46.0	.	

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company, of the Royal Mail Steam Packet Company, of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Advance.............	P. R. R.	Friday.......	Sept. 23
Panama..............	P. R. R.	Thursday....	Sept. 29
Allianca.............	P. R. R.	Wednesday.	Oct. 5
Colon...............	P. R. R.	Tuesday... .	Oct. 11
Advance.............	P. R. R.	Monday......	Oct. 17
Panama..............	P. R. R.	Saturday	Oct. 22
Allianca.............	P. R. R.	Friday	Oct. 28
Colon...............	P. R. R.	Friday.......	Nov. 4
Advance.............	P. R. R.	Thursday.....	Nov. 10
Panama..............	P. R. R.	Wednesday...	Nov. 16
Allianca.............	P. R. R.	Tuesday	Nov. 22

CRISTOBAL TO NEW YORK.

Colon...............	P. R. R.	Thursday....	Sept. 29
Advance.............	P. R. R.	Wednesday...	Oct. 5
Panama..............	P. R. R.	Tuesday	Oct. 11
Allianca.............	P. R. R.	Monday......	Oct. 17
Colon...............	P. R. R.	Sunday.......	Oct. 23
Advance	P. R. R.	Saturday	Oct. 29
Panama..............	P. R. R.	Friday.......	Nov. 4
Allianca.............	P. R. R	Thursday	Nov. 10
Colon...............	P. R. R.	Wednesday...	Nov. 16
Advance.............	P. R. R.	Tuesday......	Nov. 22
Panama..............	P R. R.	Monday.....	Nov. 28

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 4th and 25th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Almirante............	U. F. C.	Thursday....	Sept. 22
Prinz Aug. Wilhelm....	H.-A...	Saturday.....	Sept. 24
Santa Marta.........	U. F. C.	Thursday....	Sept. 29
Atrato..............	R.-M...	Saturday......	Oct. 1
Metapan............	U. F. C.	Thursday	Oct. 6
Prinz Joachim	H.-A....	Saturday......	Oct. 8
Zacapa..............	U. F. C.	Thursday	Oct. 13
Tagus...............	R.-M...	Saturday	Oct. 15
Almirante...........	U. F. C.	Thursday.....	Oct. 20
Prinz Aug. Wilhelm...	H.-A....	Saturday......	Oct. 22
Santa Marta.........	U. F. C.	Thursday.....	Oct. 27
Oruba...............	R.-M...	Saturday......	Oct. 29
Metapan	U. F. C.	Thursday....	Nov. 3
Prinz Joachim........	H.-A....	Saturday.....	Nov. 5

COLON TO NEW YORK.

Zacapa..............	U. F. C.	Friday.......	Sept. 30
Tagus...............	R.-M...	Monday.......	Oct. 3
Almirante	U. F. C.	Friday	Oct. 7
Prinz Aug. Wilhelm...	H.-A....	Tuesday......	Oct. 11
Santa Marta.........	U. F. C.	Friday........	Oct. 14
Oruba	R.-M...	Monday.......	Oct. 17
Metapan............	U. F. C.	Friday........	Oct. 21
Prinz Joachim........	H.-A....	Tuesday......	Oct. 25
Zacapa..............	U. F. C.	Friday........	Oct. 28
Magdalena..........	R.-M....	Monday.......	Oct. 31
Almirante...........	U. F. C.	Friday.......	Nov. 4

NEW ORLEANS TO COLON.

Atenas..............	U. F. C.	Saturday.....	Sept. 24
Turrialba............	U. F. C.	Saturday	Oct. 1
Abangarez...........	U. F. C.	Saturday......	Oct. 8
Atenas..............	U. F. C.	Saturday	Oct. 15
Turrialba............	U. F. C.	Saturday......	Oct. 22
Abangarez...........	U. F. C.	Saturday......	Oct. 29

COLON TO NEW ORLEANS.

Abangarez...........	U. F. C.	Thursday.....	Sept. 29
Atenas..............	U. F. C.	Thursday.....	Oct. 6
Turialba.............	U. F. C.	Thursday......	Oct. 13
Abangarez...........	U. F. C.	Thursday.....	Oct. 20
Atenas..............	U. F. C.	Thursday......	Oct. 27
Turrialba............	U. F. C.	Thursday......	Nov. 3

COLON TO BARBADOS, CALLING AT TRINIDAD.

Atrato	R.-M...	Tuesday......	Oct. 11
Tagus...............	R.-M...	Tuesday......	Oct. 25

The next sailing of the Leyland Line will be as follows: *Jamaican* on or about October 14, for New Orleans, via Kingston, Ja.

Hamburg-American steamers leave for New York at 10 a. m., and for Port Limon every Tuesday or Wednesday.

Royal Mail steamers leave for New York on alternate Wednesdays at 10 a. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans leave on Thursday at 3 p. m., and for New York on Friday at 10 a. m.

Sailings of the French Line (Cie Generale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3d and 20th of each month.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, OCTOBER 5, 1910. No. 6.

The Canal Record

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Address all Communications
THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Central Division Excavation in September.

The cross section estimate of excavation in the Central Division for the month of September is as follows:

	Cubic Yards.
Chagres district	234,290
Empire district	612,904
Culebra district	665,032
Pedro Miguel district	62,012
Total	1,574,238

All of this material was removed from the Canal prism, no excavation having been done outside of the prism during the month. With the exception of August, 1910, the preceding month, this is the largest aggregate amount of material removed from the Canal prism within the limits of the Central Division during any month of the rainy season. The average amount excavated per day (62,969 cubic yards) during the entire month of September, 1910, is the greatest daily average ever made in the Central Division during an entire month in the rainy season. The next highest daily average for an entire month during the rainy season was that made in August, 1910—59,718 cubic yards. There were 25 working days in September, 1910, as against 27 in August, 1910.

Of the total shown above there was excavated in Culebra Cut, 1,339,948 cubic yards, and in the Gatun Lake region, or Chagres district, 234,290 cubic yards. The total excavation in the Central Division to October 1, and remaining to be accomplished on that date, are as follows:

	Accomplished. *Cu. Yds.*	Remaining. *Cu. Yds.*
Culebra Cut	53,166,538	31,020,186
Chagres district	10,155,277	2,783,017
Total	63,321,815	33,803,203

Footbridges Across Spillway Dams.

Plans for the footbridges across the tops of the concrete dams of Gatun and Miraflores spillways have been approved. These bridges will be built of steel girders and will weigh about 215 tons. The largest pieces will weigh about 4,300 pounds and will therefore be easily removable. The purpose of the bridges is to give easy access to the regulating gates and the piers which support them, and to provide a convenient means of crossing the spillways.

Vacation in Guatemala.

Guatemala City has been included in the places where employes of the Commission and Panama Railroad Company may spend their annual leave. The city is 4,878 feet above sea level, and no quarantine exists against any of the ports in Guatemala.

Panama Street Work Nearly Completed.

Street improvements in Panama, authorized under the Congressional appropriation of $800,000 for sanitary improvements in the cities of Panama and Colon, are approaching completion. A small amount of work remains to be done on Lyons street, along which the new intercepting sewer extends, and also on Thirty-second and Thirty-fourth streets. The short street, known as La Neveria, branching off from Caledonia road to the left just before the road turns toward the Sabanas, will be improved for a distance of about 450 feet, which will bring it to the end of the built-up section. La Independencia street, which parallels the Panama railroad in the district of Santa Cruz, will be joined to the Caledonia road near the viaduct. This is closed territory at present, and to open a road through it will necessitate the removal of a two-story wooden tenement.

Excavation for the new storm sewer crossing Central avenue at Lyons street has been completed, and concreting around the sewer is well advanced. It will form a junction near the railroad yard with an old masonry sewer extending to the sea. The walls of the old sewer were found to be in good condition, but it has been necessary to deepen the opening all the way through to conform with the size of the new sewer. On account of the close quarters, only five or six men can be employed on this work at one time.

An application has been made, by a local real estate firm, for the opening of two additional streets in that section of Panama lying near Nineteenth street, west of Ancon boulevard.

Concrete in Culebra Cut.

Before the work of placing concrete in the sides of Culebra Cut is begun the question of what parts, if any, should be so protected will be investigated. A board consisting of Commissioners Hodges, Gaillard and Rousseau has been appointed for this purpose.

Culvert Forms at Miraflores Locks.

Steel forms of a different type from those used in the side wall culverts at Pedro Miguel Locks, will be employed in the construction of the side culverts at Miraflores Locks. They will be a modification of the type successfully used at Gatun, and will resemble a horseshoe when in position. At Miraflores, the forms will be moved entire as the work proceeds, two sections at a time, by means of a traveler operated on the inside. The upper sections of the forms employed in the Pedro Miguel operations can be utilized for the new ones at Miraflores, but the lower sections were constructed for the purpose at Gorgona shops.

Rock Slide at Bas Obispo.

A slide has developed in the east bank of Culebra Cut at Bas Obispo, where a quantity of rock estimated at 75,000 cubic yards is moving towards the Canal prism. This slide is on the berm at 95 feet above sea level, and the break follows the lines of a fault in the rock.

Zone Roads Aid Agricultural Development.

There has been considerable increase in the agricultural development of the Canal Zone, wherever roads have been built giving accessibility to a market. This development is especially marked in the vicinity of Empire, where several modern roads converge. In the valley of the Masambi River, through which a macadamized road has been built as far as the Las Cascadas plantation, a number of West Indians have begun farming in a small way. Their principal crops are yucca, yams and yampe, the latter a vegetable of a reddish color resembling the yucca root in appearance, and all three articles are said to yield well in this section, when under proper cultivation. The land in the valley appears to be especially suited to the raising of yucca and many flourishing patches of this tuber may be seen along the road.

A small quantity of sugar cane, together with bananas, papayas and other fruits, is grown, and in common with the other products, finds ready sale at Empire and Culebra, the nearest markets. Practically all the produce raised in this section is brought to town on pack animals, which cross the Cut at Empire on the suspension bridge. As showing the extent of this traffic, in one hour on a recent weekday morning, 29 pack animals passed over the bridge into Empire.

West of Empire and in its immediate vicinity the country is being settled rapidly. There is a fairly good road as far as the rock quarry, and two or three short roads running in other directions. The roads from Chorrera join the macadamized highway near the rock quarry, but it is a mere trail and of little value as a means of communication during the rainy season, and on this account the development along it is proceeding slowly.

The Panama-Corozal road has aided to a large degree the development of the land near by. When the road was first completed there were only a few scattered houses along the route. Today, 25 or 30 may be counted. The most of them are tenanted by West Indians who cultivate small patches of ground on which they grow sugar cane, corn and yams for their own use, and also for sale in the Pan-

NOTES OF PROGRESS.

(*Continued.*)

ama market. Here and there will be found a European laborer from Spain who has settled down to farming on his own account, but the greater part of those who are living on bush clearings in the Zone are West Indians, principally Jamaicans, Barbadians and Martiniquans.

A similar development has taken place along the Mount Hope-Gatun road, small tracts of land having been cleared and put under cultivation since the highway was built.

Fish Survey of Canal Zone Waters.

A letter from the Field Museum of Natural History at Chicago announces the intention of that institution to make a study of the fresh water, brackish, and salt water shore fish of the Canal Zone during the coming dry season. The study will be made before the completion of the Canal, in order that the fish may be taken before they have had a chance to cross the divide and undergo the changes incident to a new environment.

Concrete in Gatun Locks.

The record of concrete laid in Gatun Locks by the construction plant of eight mixers and four cableways, and the auxiliary plant of two mixers, during the week ending October 1, and the grand total to that date, follow:

Date.	Concrete placed.	Large stone.	Hours worked.	No. of mixers	Total.
	Cu. Yds.	*Cu. Yds.*			*Cu. Yds.*
Sept. 26	2,557	264¾	89:24	8	2,821¾
Sept. 27	2,764	346¼	94:36	8	3,110¼
Sept. 28	2,700	264	91:45	10	2,964
Sept. 29	2,694	229¼	94:15	8	2,923¼
Sept. 30	2,918	365¾	96:30	8	3,283¾
Oct. 1..	2,772	315	90:57	8	3,087
Total.	16,405	1,785	....	......	18,190
Previously reported	....	....	....	......	745,235½
Grand total..	....	....	....	......	763,425½

Concrete in Gatun Spillway.

The amount of concrete placed in the Spillway of Gatun Dam during the week ending October 1, and the total placed to that date, are shown in the following statement:

Date.	Cubic Yards.		
	Concrete	Large rock.	Total.
September 26...........	138	....	138
September 27...........	230	10	240
September 28...........	210	12	222
September 29...........	168	18	186
September 30...........	122	4	126
October 1..............	168	....	168
Total..................	1,036	44	1,080
Previously reported.....	....	....	94,230
Grand total..........	....	....	95,310

Canal Zone Rifles.

The Canal Zone Rifle Club will hold a meeting at Pedro Miguel on Sunday, October 9, at 2.30 p. m. All members and others interested are requested to attend.

H. L. BRIDGES,
Secretary, C. Z. R. C.

Pedro Miguel, C. Z., October 2, 1910.

Emanuel Estiva, a Panamanian employed on the Canal work, check No. 80375, stepped in front of a spoil train at San Pablo on the morning of October 3, and was instantly killed.

ESTIMATES FOR 1912.

Summary of Appropriations Needed in 1912—Comparison With Previous Years.

The estimates of appropriations necessary to continue the construction of the Canal in the fiscal year ending June 30, 1912, have been sent to the Secretary of War for transmission to Congress. They call for an appropriation of $47,920,847.69, classified as follows:

1. Salaries of officers and employes in the United States..................	$157,576.66
2. Incidental expenses, rents, supplies, etc. in the United States...........	70,000.00
3. Pay of members of the Commission, and officers and employes other than skilled and unskilled labor, all on the Isthmus, in the Departments of Construction and Engineering, Quartermaster, Subsistence, Disbursements, and Examination of Accounts......	4,580,669.00
4. Skilled and unskilled labor on the Isthmus in the Departments of Construction and Engineering, Quartermaster, Subsistence, Disbursements, and Examination of Accounts......	19,211,305.70
5. Purchase and delivery of materials, supplies, and equipment for the Departments of Construction and Engineering, Quartermaster, Subsistence, Disbursements, and Examination of Accounts..........................	19,186,751.22
6. Miscellaneous expenditures, supplies, labor recruiting, and all incidental expenses not otherwise provided for in the Departments of Construction and Engineering, Quartermaster, Subsistence, Disbursements, and Examination of Accounts................	1,015,300.00
7. Salaries, officers and employes, Department of Civil Administration...	594,892.00
8. Skilled and unskilled labor, Department of Civil Administration.......	22,831.20
9. Materials, supplies, and contingent expenses, Department of Civil Administration.....................	140,230.00
10. Salaries, officers and employes, Department of Sanitation............	758,710.00
11. Skilled and unskilled labor, Department of Sanitation................	231,008.00
12. Materials, supplies, and equipment, buildings, contingent expenses, Department of Sanitation, and medical aid and care of insane and indigent persons permanently disabled in the line of duty.....................	951,573.91
13. Relocation of Panama railroad, salaries, wages, materials, and all other expenses..................	1,000,000.00
Total.........................	$47,920,847.69

Classified by divisions and the purposes for which the amounts estimated are to be expended, the estimates are as follows:

Department of Construction and Engineering:

Office of Chairman and Chief Engineer—	
Officers and employes...........	$376,650.00
Skilled and unskilled labor.......	67,407.60
Materials, supplies, equipment and plant.......................	43,135.00
Total......................	$487,192.60
Atlantic Division—	
Officers and employes...........	$1,374,680.00
Skilled and unskilled labor.......	6,377,907.02
Materials, supplies, equipment and plant.......................	7,548,085.22
Total......................	$15,300,672.24
Central Division—	
Officers and employes..........	$942,010.00
Skilled and unskilled labor.......	5,115,945.76
Materials, supplies, etc.........	3,430,794.00
Total......................	$9,488,749.76
Pacific Division—	
Officers and employes...........	$963,725.00
Skilled and unskilled labor.......	5,535,126.00
Materials, supplies, etc..........	6,149,847.00
Total......................	$12,648,698.00
Mechanical Division—	
Officers and employes..........	$200,520.00
Skilled and unskilled labor......	1,480,155.32
Materials, supplies, etc.........	1,464,380.00
Total......................	$3,145,055.32
Quartermaster's Department—	
Officers and employes...........	$461,554.00
Skilled and unskilled labor.......	633,924.00
Materials, supplies, etc..........	475,000.00
Total......................	$1,570,478.00
Subsistence Department—	
Materials, supplies, etc..........	$62,000.00
Total......................	$62,000.00
Examination of Accounts— .	
Officers and employes...........	$193,560.00
Skilled and unskilled labor......	840.00
Materials, supplies, etc..........	6,650.00
Total......................	$201,050.00
Disbursements—	
Officers and employes...........	$67,770.00
Materials, supplies, etc..........	6,860.00
Total......................	$74,630.00
Department of Sanitation—	
Officers and employes...........	$758,710.00
Skilled and unskilled labor.......	231,008.00
Materials and expenses..........	951,573.91
Total......................	$1,941,291.91
Department of Civil Administration—	
Officers and employes...........	$594,892.00
Skilled and unskilled labor.......	22,831.20
Materials and expenses..........	140,230.00
Total......................	$757,953.20
Relocation of Panama railroad—	
Officers and employes...........	$144,450.00
Skilled and Unkilled labor.......	428,250.00
Materials, supplies, etc..........	427,300.00
Total......................	$1,000,000.00
Incidental expenses on the Isthmus.	$1,015,300.00
Washington office	$227,576.66
Total......................	$1,242,876.66
Grand total..................	$47,920,847.69

A comparison with the estimates and appropriations for previous years follows:

	Estimates.	*Appropriations.*
1902........................		$10,000,000.00
1904........................		(*a*)40,000,000.00
1904........................		(*b*)10,000,000.00
1906........................		(*c*)11,000,000.00
1906........................		(*c*)5,990.786.00
1907..........	$26,648,281.40	25,456,415.08
1908..........	25,406,258.73	27,161,367.50
1908........................		(*c*)12,178,900.00
1909..........	33,183,143.60	29,187,000.00
1909........................		(*c*)5,458,000.00
1910..........	35,886,190.58	33,638,000.00
1910........................		(*c*)76,000.00
1911..........	48,063,524.70	37,856,200.00
1912..........	47,920,847.69	....
Total appropriated..........		$248,002,668.58

(*a*) French canal rights.
(*b*) Paid to Panama.
(*c*) Deficiency.

Electrical Workers.

THE CANAL RECORD:

A general meeting of all electrical workers on the Isthmus is called for Sunday, October 9, at 9.30 a.m., at the Ancon lodge hall for the purpose of installing Local Lodge No. 214 of the International Brotherhood of Electrical Workers. This local holds jurisdiction over the Canal Zone.

It is desired that all electrical workers attend this meeting as all are eligible to become charter members. The charter will close very shortly. All the charter members must attend in order to be obligated, and immediately after the open meeting election of officers will take place.

H. C. MARTELL, *Secretary, pro tem.*

Balboa, C. Z., September 30, 1910.

A negro laborer was killed in a premature explosion of dynamite on the relocation of the Panama railroad between Monte Lirio and Camp Totten on the afternoon of October 3.

CANAL ZONE REVENUES.

Increases Shown in Various Departments of Postal and Customs Service During 1909-10.

The revenue derived from the sale of postage stamps and postal cards at the seventeen post-offices in the Canal Zone during the fiscal year ending June 30, 1910 amounted to $83,475.60. In addition, the sum of $92.13 was collected for second class mail matter, making the total income from this source $83,567.73, as compared with $74,241.87 for the preceding fiscal year, an increase of $9,325.86.

Registered letters and parcels to the number of 151,622 were handled, consisting of 29,082 domestic letters, 5,766 domestic parcels, 41,114 foreign letters, 1,598 foreign parcels, 71,971 official letters and parcels registered free, and 2,091 letters and parcels reregistered free. Approximately 45 per cent of the registered matter went under official frank. In the post-offices at Ancon and Cristobal 113,429 pieces of foreign registered mail were handled. Of this number, 8,778 pieces passed through the Ancon post-office for Panama and Central and South American points, and 104,651 pieces through the Cristobal post-office for points in the United States, the West Indies and Europe. There were 1,009 despatches of mail from the Cristobal post-office during the year, including several despatches of bullion direct to England, and 72,670 pouches, sacks, and registered sacks of mail were handled by the railway mail messengers.

There were 207,220 money orders issued during the year, representing a value of $5,228,562.15, and the fees aggregated $22,980.96. The number of money orders sold exceeded the sales of the previous fiscal year by 26,831, and the amount by $61,812.69. The average amount of each order was lower, however, being $25.23, as compared with $28.84 for the previous year. Orders drawn payable in the United States and foreign countries, except Martinique, amounted to $3,976,891.63. Orders drawn payable in the Canal Zone aggregated $1,247,610.22 in value, and in Martinique, where a postal convention was concluded on August 1, 1909, the value of orders drawn amounted to $4,060.30. Under this convention the settlement of accounts is made directly between the respective postal administrations. Zone post-offices are extensively used as depositories and the amount of money orders drawn in favor of the remitter and made payable at the office of issue on June 30, 1910, was $323,311.15.

There were handled during the year 1,023 pieces of unclaimed registered matter, and 32,397 pieces of unclaimed mail matter. Of the latter class, 10,798 were domestic letters and parcels, and 21,599 were foreign letters and parcels. A total of 1,801 misdirected letters was advertised in THE CANAL RECORD, and about 60 per cent of this number were delivered or forwarded to the addressees.

CUSTOMS SERVICE.

During the year, 237 vessels, with a total tonnage of 400,910, entered at the port of Ancon, and 238 vessels, with a total tonnage of 399,690, cleared. At Cristobal, 235 vessels, with a total tonnage of 636,191 entered, and 232 vessels, with a total tonnage of 625,958, cleared.

REVENUES FROM ZONE LANDS.

On June 30, 1910, there were 2,783 leases in force in the Canal Zone, 1,892 of which were for building lots and 884 for agricultural lands, an increase of 686, as compared with the preceding fiscal year. The area of agricultural land under lease was 1,545 hectares, or approximately 3,682 acres. Rents collected from leases amounted to $27,282.29, as compared with $26,969.88 for 1908-09; $17,436.76 for 1907-08, and $7,974.78 for 1906-07.

TAXES FOR LICENSE FEES.

The total collections on account of general taxes and licenses aggregated $107,642.58, as compared with $98,970.86 for the previous fiscal year. The distillation tax produced a revenue of $3,158.67, as compared with $2,209 for 1908-09, and $3,814.94 for 1907-08. The liquor license collections amounted to $65,400, as compared with $72,600 for the preceding fiscal year. Insurance companies paid $234.34 as fees for transacting their business in the Zone.

ADMINISTRATION OF ESTATES.

The estates of 38 American employes of the Canal Commission or the Panama railroad were settled during the year, and there were 17 estates still under adjustment on June 30, 1910. The moneys handled,during the year on account of this work amounted to $6,531.24. Twelve estates escheated to the Government of the Canal Zone in accordance with the provisions of Sections 779 and 780 of the Code of Civil Procedure. The value of these estates was $552.25.

MISCELLANEOUS COLLECTIONS.

In addition to the collection of Zone revenues, bills against employes and others are collected on account of hospital fees, quarantine charges, subsistence, sales of material, etc. The total of such collections for the year amounted to $31,373.03.

The grand total of revenues collected during the fiscal year by the department was $310,279.57, as compared with $297,541.60 for 1908-09, and the total of all moneys handled was $5,577,285.24, as compared with $5,491,566.48 for the previous year.

Pedro Miguel Locks.

Preparations are under way at the Pedro Miguel Locks for continuing the construction of the side and center walls from the head wall north to the forebay wall. The side walls will extend back from the head wall for a distance of about 700 feet, and the center wall for a distance of about 1,700 feet, or nearly to the site of the No. 1 berm crane. Before concrete can be laid in this section, however, considerable material, principally rock, will have to be removed. A steam shovel is already at work excavating for the extension of the east side wall; drilling operations, preparatory to blasting in the section where the center wall extension will be, are in progress, and grading for a construction track, over which the spoil from the west wall excavation will be carried, has been begun. This track will run on a berm along the edge of the west bank, extending to a dump a short distance away, where the material will be wasted. The spoil from the center wall excavation will be carried on dirt trains over a track which will be laid from the forebay to the present end of the center wall, thence through the center wall culvert to its lower outlet and on out of the lock at the south end. The height of the center wall culvert is 16 feet 8 inches; it is larger than some of the East River tubes in New York City, and the construction trains can be operated through it easily.

The work of installing the two new 2-cubic yard mixers, one in the east and the other in the west storage trestle, for producing concrete with which to build the wall extensions, is well advanced. The west mixer is completed, and the east mixer lacks only its electrical equipment.

The construction of the side and center walls toward the south end of the lock has been advanced. A section of the east side wall, in which the greatest amount of concrete remains to be laid, is built to its permanent height, and its foundation has been completed nearly to the lower gate sill. The culvert section in the center wall is finished to within about 100 feet of the sill.

Concreting around the T culvert and the lower gate sills is in progress. As this work is out of the reach of the chamber cranes, the concrete for it is produced by the mixer situated on the east bank, which formed a part of the auxiliary equipment before the installation of the permanent handling plant. The mixer was placed in operation on September 20, and is delivering an average of 100 cubic yards a day. The concrete is carried from the mixer in buckets, thence raised by a locomotive crane into hoppers, and from there allowed to fall into Decauville cars to be transferred to the point desired.

Considerable back filling with rock from Ancon quarry has been accomplished along the west wall of the lock.

The record of concrete laid for the six 8-hour working days of the week ending October 1, and the total to that date, follows:

Date.	Cubic Yards.			
	Construction plant.	Auxiliary plant.	Large stone.	Total.
September 26..	1,968	....	....	1,968
September 27..	1,876	112	9	1,997
September 28..	1,764	162	5	1,931
September 29..	2,200	24	5	2,229
September 30..	1,776	64	9	1,849
October 1.....	1,874	272	14	2,160
Total.......	11,458	634	42	12,134
Previously reported.....	....	....	3,266	303,205
Grand total..	....	....	3,308	315,339

Concrete Work at Miraflores.

A statement of the concrete laid in the locks at Miraflores during the six 8-hour working days of the week ending October 1, and the total placed to that date, follows:

Date	Auxiliary Plant.			
	2-Cubic yard mixers.	½-Cubic yard mixers.	Large stone.	Total.
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*
September 26..	538	455	10	1,003
September 27..	462	447	43	952
September 28..	406	291	30	727
September 29..	544	206	35	785
September 30..	472	176	12	660
October 1.....	360	291	5	656
Total.......	2,782	1,866	135	4,783
Previously reported.....	....	....	483	25,146
Grand total....	....	....	618	29,929

Steamship Announcements.

The sailing of the *Cristobal* from pier No. 11, Cristobal, has been fixed for 3 p. m., Monday, October 10.

United Fruit Company ships between Colon and New York will sail on Thursday, instead of Friday, beginning November 17.

Modesto Huete of Panama has been appointed consul of Costa Rica in Panama.

MUNICIPAL IMPROVEMENTS.

New Contract for Payment of Improvements in Colon and Panama.

A new contract has been entered between the United States and the Republic of Panama providing the manner in which payment shall be made for the sewers, waterworks, and pavements installed in the cities of Colon and Panama under Article VII of the Treaty of November 18, 1903. The contract was signed on September 30, but is in force as of July 1, 1910. The chief points in which it differs from the old, contract signed on October 14, 1907, are: (1) The amount estimated to be raised in fifty years for the cost of installing, operating, and maintaining for fifty years the waterworks and sewers, and construction, maintenance and repair of pavements for ten years was estimated under the old contract as $3,276,250, or $65,525 per year for the city of Panama, and $3,492,500, or $69,850 per year for Colon. In the new contract the amounts due on July 1, 1910 are specified and a quarterly adjustment is agreed upon to meet interest and the cost of maintenance. (2) "Replacements" are defined in the new contract, and were not in the old. (3) Provision is made in the new contract for extensions, and no such provision was made in the old contract.

Under the old contract there had been paid up to July 1, 1910, for public works in Panama, $228,833.40, and in Colon, $220,028.74.

The new contract provides:

The United States hereby agrees that it will maintain and operate for fifty years from July 1, 1907, the waterworks and sewerage systems installed by it in the city of Panama, and that it will maintain and repair for ten years from said last named date the pavements constructed by it in the city of Panama.

It is agreed that the cost of the works referred to, less the amounts paid as water rates by consumers in the city of Panama and the amounts paid to the United States by the Republic of Panama, was one million, one hundred, thirty-eight thousand four hundred thirty-eight and 8/100 dollars on July 1, 1910 (Colon $775,245.18); and in order to provide for the payment of the said principal sum, with interest thereon at the rate of two (2) per cent per annum, and to pay for the cost of the new work, and the cost of maintenance, operation, repair, and replacement of the water-works system and pavements as the work may be done from time to time, the Republic of Panama agrees that the United States may collect the water rates from private consumers in the city of Panama, in the amount and subject to the conditions provided for by the regulations, which are made part of this agreement, respecting the use of water from the public mains and the collection of water rates approved by competent authority of the Republic of Panama and by the Isthmian Canal Commision, effective on and after July 1, 1907.

(The odd provision for a rate of 30 cents per thousand gallons for all water used in Colon by the Panama railroad and the Isthmian Canal Commission is inserted here in the contract referring to Colon.)

It is agreed that on September 30, December 31, March 31 and June 30, yearly, during the period of forty-seven years beginning July 1, 1910, the United States shall receive from the Republic of Panama, and the Republic of Panama agrees to pay to the United States such amount in money, in addition to the water rates collected, hereinbefore referred to as will equal during each quarter of the first year, one-fourth of one-forty-seventh of the sum of $1,138,438.08 (Colon $775,245.18) referred to as the total amount due July 1,1910, after the United States has deducted from the sum of the water rates received for the quarter the expense of operation, maintenance, and repairs, as well as a proportionate part of the cost of maintenance, operation, and repair of the reservoir and pipe lines outside of the municipal limits, and the proper proportion of the two per cent of the capital cost of said reservoir and pipe lines, and interest at the rate of two per cent per annum for the quarter on the principal sum due at the end of said quarter; the balance remaining of the principal sum shall be increased by the cost of extensions and replacements in the water-works and sewerage systems and pavements during the quarter, and the balance so increased shall be the principal sum due at the beginning of the next quarter. If at the end of the quarter there should result a surplus in the sum of the water rents collected, such surplus shall be applied, in addition to the one-quarter of one-forty-seventh of the principal sum, to the reduction of the principal then due, and the same computation and the same payments shall be made quarterly for each succeeding quarter, until the expiration of forty-seven years from July 1, 1910.

The total payments quarterly in the second year shall be based on one-fourth of one-forty-sixth of the principal sum due at the end of that quarter, and in the third year one-fourth of one-forty-fifth of the same principal sum at the end of each quarter, and so on during the succeeding years with the same ratio of reduction, until the full period of forty-seven years shall have expired.

If at any time it shall appear that the United States can reimburse itself in forty-seven years for the cost of the works heretofore done and those anticipated to be necessary by the collection of lower water rates than are provided for by the regulations hereinbefore referred to, or that it would be necessary to increase the rates in order to reimburse the United States within the period stated, for the cost of such works, this agreement shall be modified or amended so as to increase or decrease the rates accordingly.

It is further agreed that at the end of seven years from July 1, 1910, the Republic of Panama shall have the right to take over from the United States, and the United States shall have the right to turn over to the Republic of Panama the maintenance of the pavements heretofore or hereafter installed by the United States in the city of Panama (Colon).

It is further agreed that the purpose of this agreement is to enable the United States to reimburse itself for the actual amount expended, or to be expended, by it for the installation of the water-works and sewerage systems in the city of Panama (Colon), and the operation and maintaining of such systems for the period of forty-seven years from July 1, 1910; for street pavements constructed by the United States in the city of Panama (Colon) and the maintaining, repairs, and replacements and extensions of pavements for a period of seven years from July 1, 1910, together with interest at two per cent per annum on the amount expended or to be expended by the United States for such water-works, and sewerage systems, and paving; and if at the end of forty-seven years from July 1, 1910, it shall appear that the United States has collected from the water rates established by this agreement and any amendments and modifications thereto, more than such actual cost with interest, such excess shall be returned to the Republic of Panama; and if it shall appear at the end of such period that the United States has collected less than such actual cost, with interest, the Republic of Panama shall pay to the United States the full amount of the deficit.

It is agreed that "replacements" within the intent of this agreement shall be understood to mean repairs or renewals of the work costing more than $1,000; those costing less than that amount shall be considered repairs. (Here is inserted a proviso that the books of the Isthmian Canal Commission shall be open to agents and officers of the Republic of Panama.)

In addition to the provisions hereinbefore in this contract made which relate to the improved sections of said city of Panama (Colon) as they now exist, it is agreed that all extensions of the water and sewer systems and of street paving and construction of said city, to sections or portions of said city which are now or may hereafter be unimproved—that is to say, without houses or buildings thereon—shall be made by the Isthmian Canal Commission, or by such other agency as the United States Government may select. Before any such unimproved sections or portions of said city shall be opened up for the erection of houses or other buildings thereon, same must be plotted and laid out systematically and in proper municipal order to admit of and provide for, therein, the systematic and sanitary opening and paving of streets, and the orderly and sanitary construction of water mains and sewers to be connected with the present water and sewer systems of said city; and before any houses or other structures are erected on any unimproved sections or portions of said city, such sections or portions, in addition to being properly plotted and laid out as aforesaid, must in a sufficient and sanitary manner be paved, and water mains and sewers must be constructed and extended throughout the same. Such plotting and laying out of such unimproved sections of said city, and the work of paving therein the streets, and the construction and extension of the aforesaid sewers and water mains therein, shall be performed by and under the plans of the Isthmian Canal Commission, or such other agency as the United States Government may designate. For all the improvements and works in and about such unimproved sections of said city named and provided for in this clause the United-States Government, or its properly designated agent, shall be paid by the Republic of Panama, in cash, or in such other manner as the United States or its said agent may require; and thereupon the municipal improvements constructed agreeably to the provisions of this clause shall become the property of the Republic of Panama.

When the sewerage and water systems and the street paving and construction are extended to any unimproved sections or portions of said city, as in this clause provided, and are paid for as in this clause provided, rentals for the use of such water and sewerage and street improvements shall be fixed, collected and applied in the same manner as are fixed, collected and apolied similar rentals provided for in this contract; unless, in the meantime, the Republic of Panama shall have duly acquired full right and title to such other municipal improvements, agreeably to the Treaty between the Republic of Panama and the United States, signed November 18,1903, or agreeably to this contract, or any other contracts made in accordance with said Treaty; in which case, whatever rentals may be derived from the municipal improvements provided for in this clause shall be and remain the revenue of said Republic of Panama.

The cost of maintaining and operating the municipal improvements provided for in this clause shall be borne and taken care of in the same manner as is the cost of maintaining and operating the other municipal improvements named in this contract and agreement.

The provisions of this clause in respect to the erection of buildings on the aforesaid unimproved sections of said city shall be made effective by proper presidential decree, to be immediately promulgated, which decree shall thereupon become a part of the sanitary rules and regulations of said city.

Ancon Rock Crusher.

A statement of the rock crushed at Ancon quarry during the week ending October 1, follows:

Date.	Hours worked.	Cubic Yards.
September 26	7:35	2,830
September 27	7:35	3,135
September 28	1:00	240
September 29	....	*465
September 30	....	*225
October 1	....	....
Total	16:10	6,895

*These figures refer to rock shipped from the bins as none was crushed on these dates.

The shaft of the main crusher broke down shortly after the day's work had begun on Wednesday, September 28, compelling a suspension of operations during the remainder of the week. Repairs were completed and the plant was started up again on Monday morning, October 3.

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the week ending October 1, follows:

DATE.	Hours worked.	Cubic Yards.
September 26	8:40	3,101
September 27	7:25	2,445
September 28	9:18	2,891
September 29	6:30	2,433
September 30	6:05	1,729
October 1	9:30	3,149
Total	47:28	15,748

Fatal Accident Near Paraiso.

Preston Douglas, a Barbadian, check No. 93530, was fatally injured, and Charles Green, a Panamanian, check No. 21215, sustained the fracture of a leg in an accident near Paraiso at 6.45 a. m., on Thursday, September 29. The men were employed as brakemen and were standing on the footboard of the tender of locomotive No. 298 as it backed down an incline track just north of bridge No. 57 to couple on to a train of dirt cars. The engine wheels slid as the air was applied to them and the foremost car was struck with considerable force, pinning the two men between the car and tender. Douglas lived in Panama and was removed to Ancon Hospital, where he died a few hours later.

LAKE REGION EXCAVATION.

Work Between Gatun Dam and Culebra Cut.

Excavation in the channel through the Gatun Lake region is both retarded and assisted by freshets in the Chagres River. Within the past ten days the shovels at work at 40 feet above sea level have been flooded twice and have been obliged to suspend for a day each time to allow the water to subside. Yet each of these freshets carried away thousands of cubic yards of material from the dumps along the river, and thus were of assistance in that part of the work.

The river dumps are proving very economical for clay in the wet season, as compared with dumps on which the tracks must be shifted continually. Before they were opened the cost of dumping at Gorgona and Mamei was from seven to 15 cents a cubic yard, and on the river dumps this has been reduced to four cents a yard, and some material is wasted at as low a cost as one cent a yard. On the dump at Gorgona, both the plan of casting the earth into the river from a high trestle, and the regular dry dump are in use, the latter because it is desirable to make a fill on which the yards at Gorgona shops may be extended, if desired. On the trestle dump the clay is sluiced into the river, and two water cranes have been erected to wash out mud that sticks in the cars. It was here that the invention of a Spanish subforeman was first used in dumping and "righting" the cars. It consists in placing a piece of pipe under the box of the car at a slight angle with the track, with one end touching the box and the other resting on a tie. The locomotive draws the car slowly forward and, as the pipe approaches the vertical, the body is dumped. The same plan is used in "righting" the body, this operation being accomplished without the train coming to a stop. Five men can do the work previously requiring 20 by use of the "pipe tilter." The pay of the subforeman was increased when the effectiveness of his method was demonstrated.

At Point 5, near Mamei, the dump is on a trestle alongside the river, and the material is sluiced into the stream. In spite of the sluicing, however, the bank grows slowly to the level of the track, and at regular intervals, the clay is dislodged by small charges of dynamite. From 2,000 to 3,500 yards of spoil are disposed of daily at this dump, and only 15 laborers are employed in keeping it in condition. The cars are so loaded by the shovels as to make it unnecessary to hook the chains, and they are dumped by the "tilting pipe." They are hauled back to the shovel without being "righted," and the shovel pushes each body into position with the first dipperful of earth. There is a dump on a bend in the river at San Pablo, in which 50,000 carloads of earth have been wasted, two loads at a time. The river is forced by a bar on the west side to flow sheer against the east bank, and the current thus carries away the spoil as rapidly as it is dumped.

At present, excavation in the lake region is confined to steam shovel between Gorgona and Mamei, and to hydraulic work by a contractor, opposite Tabernilla. At Gorgona, three shovels are digging at 50 feet above sea level, 11 feet above the bottom of the channel. One of these has made a cut so close to the California Hotel that the foundations of this big frame building are right on the edge of the ditch. The next cut would include part of the building, if it were not that the Commission has agreed to tear it down and reerect it at New Gatun.

Four French dredges lie in the channel, two at Gorgona and two at Mamei, and the digging is carried on around them. They were erected and had been in use by the French. Three of them are of the Belgian ladder type, which makes its own flotation; and one is a small suction. Those at Gorgona have been stripped of all valuable machinery and most of the parts have been put to use in the dredges at the Pacific entrance. Only a few parts have been taken from the ladder dredge and the suction dredge at Mamei. Inasmuch as these old dredges are not greatly in the way of the excavation, it is likely that they will be allowed to remain in their present positions until the lake is formed, when they can be floated out of the channel at much less cost than would be incurred by wrecking and removing them now.

The shovels at Gorgona have already cut away a small portion of the cane plantation of Antonio Andrade, who ran a rum distillery there for many years and is believed to have made a fortune from the business. The whole plantation will be covered by the lake in a few years. He has been paid $90,000 by the Government for damages sustained, and is merely occupying the place until the Canal work causes him to move.

Nine shovels are now at work in the lake region, three at 50 feet above sea level at Gorgona, and two at Point 5, three at east Mamei, and one at Point 6, on the 40-foot level. The excavation between Gatun Dam and Culebra Cut, 23 miles, is 78 per cent completed.

Central Division Dumps in September.

The six unloaders in the Pedro Miguel district of the Central Division during the month of September, 1910, unloaded 1,750 Lidgerwood trains, an average of 70 trains per day for the month. The three unloaders at Balboa averaged 40 trains per day and the three at Miraflores 30 trains per day.

In addition to the Lidgerwood trains above enumerated, 62 Western dump trains were unloaded at Balboa and five at Miraflores, making a grand total of 1,817 trains unloaded in the district during the month of September. This is the greatest number of trains unloaded with six unloaders in a single month in the Central Division, the best previous record having been made in August, 1910, when an average of 67½ trains were handled per day.

There was a delay of 91 hours and 21 minutes at Balboa waiting for trains. In addition, there were other delays on account of derailments, breaking down of unloaders, etc. At Miraflores, the delay due to waiting for trains was 38 hours and 15 minutes.

From September 1 to 15, the Lidgerwood trains averaged 19 cars to the train, after which date an additional car was added, giving an average of 20 cars per train.

A statement of the Lidgerwood cars unloaded in the Central Division during the month of September, follows:

Location.	No. of unloaders.	No. of trains.	No. of cars.
Balboa	3	1,000	19,544
Miraflores	3	750	14,618
Gamboa	2	604	11,476
Tabernilla	2	518	10,054
Total	10	2,872	55,692

EXECUTIVE ORDER.

Transfers from Isthmian Canal Service to Service in the United States.

Civil Service Rule X, paragraph 8, clause (a), is hereby amended by inserting in the tenth line after the word "requirement" the following words:

"in cases of transfer from the Isthmus of Panama or ——"

As amended clause (a) will read as follows

He must have served three years in or under the department or independent office from which transfer is proposed; but the Commission may waive this requirement, when it deems such action necessary in the interest of the service. in cases of transfer other than from one executive department to another at Washington, D. C. In any case he must have received absolute appointment and have actually served at least six months next preceding the transfer; but the Commission may waive this latter requirement in cases of transfer from the Isthmus of Panama or where the person has been separated within a year from a competitive position after six months' service therein, upon the certificate of the proper officer that the separation was caused by necessary reduction of force and not by inefficiency, and may allow transfer to any other department or office upon his passing an examination prescribed by the Commission testing his efficiency for the position to which his transfer is proposed, subject to the other provisions of this rule.

The purpose of this order is to give to employes in the Canal Service who are otherwise eligible the same consideration as is accorded to employes in the classified Philippine Service who have rendered at least three years of meritorious service in the tropics.

Wm. H. Taft.

The White House,
September 16, 1910.
[No. 1246.]

The term "Commission" as used above, refers to the Civil Service Commission.

The effect of this amendment is to provide for the nominal reinstatement within one year from date of separation of persons with a clear record who have become separated from the Isthmian Canal service, for the purpose of securing transfer to the service in the United States. Ordinarily, such transfers will not be approved by the Civil Service Commission until after three years' service on the Isthmus, but in meritorious cases they may be approved after two years of service. This paragraph as amended, and the other provisions of Civil Service Rule X, apply only to those persons appointed to the service on the Isthmus of Panama through competitive examination, or by transfer or promotion from a competitive position.

Civil Service Examinations.

Civil service examinations are scheduled to be held at Culebra as follows:

Postal clerk	October 16
Trained nurse	October 16
Mechanical draftsman	October 16–17
Topographic draftsman	October 16–17

All of the above examinations are for appointment in the Isthmian Canal service. Application blanks for any of them may still be secured from the undersigned.

John K. Baxter,
Secretary, Isthmian Civil Service Board.

Culebra, C. Z., September 28, 1910.

SOCIAL LIFE OF THE ZONE.

Women's Clubs and Other Features.

The October meeting of the Canal Zone Federation of Women's Clubs will be held in Gorgona on Thursday, October 13. The meeting will convene at the Commission clubhouse at 1.30 p. m. The plan of the program is to emphasize the practical working of the Federation committees by papers and reports from the various chairmen. A short musical program will be provided. Delegates and alternates will take the trains which meet at Gorgona at 11.40, and the Federation lunch will be served at the Commission hotel at 12.30. By courtesy of the Panama railroad transportation will be furnished the delegates and alternates. The transportation cards must be filled out and signed in order to be valid. Credentials should be duly filled out and signed and handed to the members of the credentials committee on the train. All reports and resolutions must be presented in writing.

The Cristobal Woman's Club gave a reception to the outgoing and incoming presidents on Wednesday, September 28. A program was rendered consisting of a piano solo by Mrs. F. C. Stratton; trio by Mrs. J. A. Smith, Miss Margaret Smith and Mrs. J. C. Biers; accompanist, Mrs. Carl Hoit. About fifty members and their friends were present. The outgoing president was Mrs. Thomas E. Brown and the new president is Mrs. E. H. Colip.

At the next meeting of the club, on October 12, Dr. C. C. Pierce will speak on "Sanitation." The club will hold a fancy dress ball in aid of the Salvation Army at the Lincoln House, Colon, on Saturday evening, October 15. Tickets will be on sale as advertised in Cristobal and Colon, and at the Hotel Tivoli, Ancon.

The weekly meetings of the Paraiso Woman's Club were resumed on Wednesday afternoon, September 29. The proceeds of the cake sale held in August amounted to nearly $30. The club will hold a similar entertainment on Wednesday evening, October 12. It is proposed, if sufficient interest is manifested by the residents of Paraiso, to hold a social entertainment one evening each month. A committee with R. C. Smith as chairman is arranging for a Hallowe'en ball to be held on Saturday evening, October 29, for the benefit of the Woman's Club, the proceeds of which will be devoted to the establishment of a playground for the children of the village. A Christmas bazaar is also contemplated.

An election of officers was held in the Pedro Miguel Woman's Club in August, when Mrs. George Brown was again chosen president and Mrs. W. S. Jennings, vice-president. Mrs. E.J. Brown was elected secretary and Mrs. Ernest Bitely, treasurer. Meetings have been held semimonthly through the summer at the homes of the members, recent hostesses having been Mrs. F. R. Roberts of Empire, and Mrs. John Walker of Pedro Miguel.

On Thursday and Friday afternoons the clubhouse is open to women, and considerable interest is taken in bowling, the number of women in the alleys having increased from three to nineteen during the past few weeks. As many as forty games are played in one afternoon.

The Daughters of Rebekah, Isthmian Lodge No. 1, Gorgona, held a special meeting on Friday, September 23, the occasion being the fifty-ninth anniversary of the founding of the order. There was a program consisting of piano and vocal solos, recitations, and an address by each of the officers on special features of the work of the order. Refreshments were served.

Social activities of an informal, cooperative nature have sprung up in Culebra in the past month. An open evening, held at the Commission clubhouse once a month, brings together a large number of residents in informal intercourse. A program of varied character is provided and refreshments are served. The entertainments are open to any resident of the village, with their friends, irrespective of membership in the Y. M. C. A.

The formal opening of the Hotel Tivoli tea room took place on Saturday afternoon, October 1, when there was a large attendance. The tables were decorated and tea was served from 3 to 6 o'clock. A part of the south veranda, with the view of the Pacific, has been suitably furnished and will be open every afternoon, including Sundays.

The Ladies' Aid Society of the Methodist Episcopal church, Panama, will hold an "ice cream social" in Ancon hall on Wednesday evening, October 12. Admission will be free and a cordial invitation is extended to the general public to attend.

Canal Zone Humane Society.

The Ancon Dramatic Club will repeat the performance of Charles Hawtrey's comedy, "The Private Secretary" at the National Theatre, Panama, for the benefit of the Canal Zone Humane Society on Friday evening, October 14. A special train will be run according to the schedule given below. Ticket holders will be entitled to free transportation on this train. Tickets may be secured at the Commission clubhouses, the Camp Elliott Y. M. C. A., the Las Cascadas and Pedro Miguel post-offices, the Corozal, Balboa and Ancon dispensaries, the Tivoli Hotel, and the news agency of Vibert and Dixon, Panama. The number of tickets sold will be limited to the seating capacity of the theatre and the advance sale will be closed on Thursday evening, October 11. The schedule for the special train follows:

Leave Colon, 5.45 p. m.; Gatun, 6.03 p. m.; Gorgona, 6.58 p. m.; Bas Obispo, 7.08 p. m ; Las Cascadas, 7.16 p. m.; Empire 7.21 p. m.; Culebra, 7.26 p. m.; Paraiso, 7.35 p. m.; Pedro Miguel, 7.40 p. m.; Corozal, 7.51 p. m.

Returning, the train will leave Panama at 11.30 p. m.

The Canal Zone Humane Society was recently reorganized and funds are needed to carry on educational and other work outlined by the organization. The membership is still small and efforts are being made to awaken an interest in the work and place the society on a sound basis. The net proceeds from the performance of "The Private Secretary" by the Ancon Dramatic Club in August for the benefit of St. Luke's church organ fund were $325.

Baseball.

A baseball team has been formed out of the clubs of the Atlantic League, exclusive of the Commissary-Subsistence team, to be known in the new league organization as the Atlantic club, instead of the Cristobal-Colon team, as heretofore mentioned. All the clubs in the league have agreed to respect last season's contracts, thereby reserving the players until definite action is taken concerning them. It has been further agreed that the number of players to be carried shall be twelve for each club, and also managers and umpires, when necessary, upon playing dates when the official schedule calls for any of the teams to visit another town in the circuit. The new league organization will be officially known as the Panama Canal Baseball League.

PERSONAL.

Col. Geo. W. Goethals sailed for the United States on the *Colon*, on September 29, to attend the wedding of his son, Lieut. George R. Goethals. He will be away from the Isthmus three weeks.

Lieut.-Col. C. A. Devol, and Mrs. Devol, were passengers on the *Panama*, which arrived at Cristobal on October 5.

Corozal Masonic Club.

The Corozal Masonic Club was organized on Wednesday evening, September 21, with a membership of about 25. Another meeting was held on September 28 to consider a constitution and by-laws, and on Wednesday night, October 5, a meeting will be held to elect officers and effect a permanent organization. The regular meetings of the club will be held on the first and third Wednesday evenings of the month.

Hebrew Benevolent Society—Day of Atonement.

THE CANAL RECORD:

Divine service will be conducted at the Sojourners lodge room, Colon, on Wednesday evening, October 12, at 6.15 o'clock, and on Thursday morning, October 13, beginning at 8.15 o'clock. All Jewish residents of the Canal Zone are cordially invited.

J. JULIUS SASSO,
Secretary.

Colon, R. P., October 1, 1910.

Electrician and Wireless Operator.

Examinations are announced to be held for the positions of electrician and wireless telegraph operator in the Lighthouse Service, at $75 a month, for duty under the Assistant Inspector of the Twelfth Lighthouse District, Territory of Hawaii, and wireless telegraph operator in the Philippine Bureau of Posts, at $1,200 per annum. The receipt of applications will be closed on October 11. Application blanks and information in regard to either of the above may be secured by addressing the undersigned.

JOHN K. BAXTER,
Secretary, Isthmian Civil Service Board.

Culebra, C. Z., October 1, 1910.

Claims for 16 houses and the surrounding fruit trees in the Canal prism, north of Bohio, have been allowed at $800.50. The claims as presented aggregated $954.40.

Band Concert.

The Isthmian Canal Commission Band will give a concert at Hotel Tivoli, Ancon, C. Z., on Sunday, October 9, 1910, at 7.30 p. m. The program follows:

1	March—*Col. Sullivan*	Barrington-Sargent
2	Overture—*Raymond*	Thomas
3	Intermezzo—*Silver Bell*	Wenrich
4	Waltz—*Bad'ner Mad'ln*	Komzak
5	Medley Selection—*The Sunny South*	Lampe
6	*a* Oriental Rag—*Turkish Trophies*	Egan
	b Medley March—*Has Anybody Here Seen Kelley?*	Murphy
7	El Gitanillo—*Tango*	France
8	Selection—*Bright Eyes*	Hoschna
9	Concert Piece—*Chimes of Love*	d'Albret
10	March—*Militar*	Franco

CHAS. E. JENNINGS, *Musical Director.*

The next concert will be given at Culebra on October 16, at 5.45 p. m.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

On Saturday night, October 1, the Gatun second team took three games from the Culebra second team by the following scores:

Gatun.				Culebra.			
Dalton.....	166	151	145	Fleischman	170	185	150
Harrington..	175	154	174	Huttlemeier	125	146	116
Myers......	162	158	155	R. Kop'ski	169	129	155
Duryea.....	163	165	140	Cushing...	170	195	186
Hodges.....	200	189	191	Mengel....	100	134	163
Total.....	866	817	805	Total...	734	789	770

A moving picture entertainment was given at the clubhouse on Tuesday evening, September 27.

The present standing of the men in the chess tournament is as follows:

	Won.	Lost.
Bartlett......................	2	5
Dubois......................	6	2
Mengel......................	3	6
Putnam......................	2	5
Stiles......................	2	3
Warner......................	8	0

All men interested in basketball should come out for practice on Wednesday nights. Gymnasium classes are held Mondays and Wednesdays from 5.15 to 5.45 p. m.

The standing of men on September 24 who have played ten or more games in the local handicap bowling tournament was as follows:

	Name.	Won.	Lost.	Average.	Per cent.
1	Hall............	10	3	181	769
2	Hurst............	10	4	180	714
3	Hostetter.........	9	4	194	692
4	Huttlemeier......	17	8	173	680
5	Hayes............	12	7	179	631
6	Dunham.........	10	6	167	625
7	Cornthwaite.....	13	8	174	619
8	Mengel..........	16	11	172	592
9	Leibundguth.....	7	7	163	500
10	Koperski, R......	11	12	169	478
11	Brown..........	6	8	166	428
12	Fleischman......	8	12	165	400
13	Sickler..........	5	8	163	396
14	Fox.............	9	15	158	375
15	Koperski, E......	8	14	157	363
16	Hill.............	4	7	156	363
17	Warner..........	4	9	152	307
18	Case............	5	14	166	263

EMPIRE.

Empire took two out of three games from Gorgona's first team on Saturday night, October 1, by the following scores:

Gorgona.				Empire.			
Roper......	142	166	188	Brown....	180	158	147
Gaedkie....	163	159	179	Potter....	193	169	194
White......	161	142	156	Shaugne'sy	220	146	155
Otis........	167	190	194	Pearson...	174	167	180
Sexton......	168	140	140	Huson....	161	171	121
Total.....	801	797	857	Total...	928	811	797

The membership of the Empire clubhouse is now 350. The membership committee is working hard to reach the 400-mark before January 1.

The meeting of the discussion club last week was led by R. G. Goodman of Cristobal, his subject being "What Is Happiness?"

The next moving picture entertainment will be held on Friday evening, October 7.

Miss MacLaren's final entertainment at the Empire clubhouse was attended by one of the largest audiences ever assembled in the hall. After the entertainment an informal reception, followed by a musicale, was tendered Miss MacLaren.

Mr. Gustavson has resigned as manager of the bowling alleys after over two years' service. His place will be filled by Mr. Goolsby.

GORGONA.

At the open meeting of the discussion club on Tuesday night, September 27, impromptu subjects were brought up as suggested by the men present. Among those of interest were "The Simple Life" and "Under What Conditions can We do Our Best Work?"

The bowling match on Saturday night, October 1, between the Gorgona and Empire second teams resulted in Empire winning three games. The scores were as follows:

Empire.				Gorgona.			
Gustavson..	139	162	223	Stoehr....	161	178	192
Sawtelle....	148	167	152	Stewart...	125	144	154
Goolsby....	234	180	169	Bordt.....	156	145	166
Giavelli.....	156	181	153	M.Varen'p.	129	175	159
Bardelson...	159	185	169	Haldeman.	137	166	188
Total.....	836	875	866	Total...	708	808	859

The principal feature in the pool and billiard room for October will be a billiard tournament. Entries closed on Monday, October 3, and the tournament opened on Tuesday, October 4, with the following entries: Clarke, Robitoy, Tyan, Clapp, Francis, Evans, Ashman, and Heltemes.

The new barber shop rates are five cents more than the prevailing rate in town to nonmembers, and five cents less than the prevailing rate in town, to members. The hours for the barber shop are from 11.30 a. m. to 4.30 p. m., and from 5.30 to 10.30 p. m.

GATUN.

Until further notice gymnasium classes will be held Monday and Wednesday evenings.

Basketball practice will be held on Tuesday and Thursday evenings.

E. A. Putnam, secretary of the Culebra Y. M. C. A. will lead the meeting of the discussion club on Thursday evening of this week. His subject will be "What Is Failure?"

The next moving picture entertainment will be given on Thursday evening, October 13.

The Gatun first team took three bowling games from the Culebra first team on Saturday evening, October 1, the following being the scores:

Culebra.				Gatun.			
Cohen......	180	135	170	Ponton....	144	152	144
Hall........	157	124	133	Wolf......	151	194	171
Hayes......	150	136	128	DeMoll...	189	160	167
Case.......	190	138	127	Severn....	149	135	186
Harrington..	127	101	178	Barte.....	175	167	146
Total.....	804	634	736	Total...	808	808	814

The prize for high bowling score during the month of September was won by Mr. Durand with 222. The Gatun bowling alleys have been improved by the installation o an electric fan.

The membership of the Gatun association is now 380. A cordial invitation is extended to every American on the gold roll to join.

An informal "social" and smoker will be held on Tuesday evening, October 18. Every man in Gatun is invited.

Gorgona's second team will bowl at Gatun on Saturday evening, October 8.

A progressing pool tournament begins this week. Any member may enter. The prize will be a pair of gold cuff links. A three-cushion billiard tournament will also be started in a few days.

CRISTOBAL.

The membership campaign closed on September 30 with a final standing of 442. The I. C. C. team captained by C. A. Chambers won the team contest with 36 names to its credit.

The moving picture entertainment last week was well attended. Another entertainment will be given on Saturday, October 5, and again on October 14, in connection with a members' smoker which will be given on that evening.

The meeting of the discussion club on Thursday evening, September 27, was led by F. C. Freeman, his subject being "Our Thoughts."

Lieut. C. M. Hargraves of the British Army gave an account of his trip around the world on Friday night, September 28. Several readings and imitations were also given by him during the evening.

On Saturday night, October 1, the Marine Band from Camp Elliott gave a concert at the clubhouse.

The Cristobal basketball team defeated the Gatun team on Saturday night, October 1, by a score of 16 to 15. The line-up of the teams was as follows: Gatun—Porter, Eggleston, Porter, Mitchell, Conners and Hubner. Cristobal—Prather, Luce, Vifquain, Weller, Schwallenberg and Pring.

The local bowling match played on Saturday night, October 1, between the "Knutt-splitters" and the "Wood-butchers," resulted as follows:

"Knutt-splitters."				"Wood-butchers."			
Dickson....	183	130	151	Rabbitt...	148	142	140
Henry......	127	166	131	Adams....	185	151	173
Turner.....	158	137	153	Burns, A..	157	129	184
Burns, W...	103	91	132	Duer......	168	162	149
Burns, T....	184	136	199	Collins....	169	153	189
Total.....	755	660	766	Total...	827	737	835

Dr. Blackburn made high average for September, and Rabbitt made high score, with 253.

PORTO BELLO.

On Friday evening, September 23, C. D. Morgan played seven members of the chess club simultaneously. He won four of the seven games played.

On Tuesday night, September 26, the meeting of the discussion club was led by Geo. R. D. Kramer of Culebra; subject, "Exercise."

A pool tournament with 15 men entered has just been started. The men entered in class A are: Bradley, Cornick, Hill, Ross, Stoll, Tuttle, and Wilson. Wilson plays his games with a handicap of 25 balls. The men entered in class B are: Arden, Beattie, Elliott, King, McDonald, Richardson, Sweeney, Van Fleet, and Wallen.

Lieut. C. M. Hargraves of the British Army gave a lecture on Tuesday night, September 26.

Married.

FORD-ROARK—At Cristobal, on September 29, 1910, by Rev. Carl H. Elliott, Miss Chloe M. Roark, of Kansas City, Kan., to Stanley R. Ford of Cristobal. Residence, Colon Beach.

OFFICIAL CIRCULARS.

Acting Chairman and Chief Engineer.

CULEBRA, C. Z., September 29, 1910.

CIRCULAR No. 352:

During my absence from the Isthmus, Lieutenant-Colonel H. F. Hodges will be in charge of the work as Acting Chairman and Chief Engineer, effective September 29, 1910.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Luggerman in Commissary Department.

CULEBRA, C. Z., September 30, 1910.

CIRCULAR No. 229-M:

The following additional designation and rate of pay is authorized for the Commissary Department only:

Designation.	Unit.	Rate of Pay.
Luggerman................	Mo.	$40.00

H. F. HODGES,
Acting Chairman, Isthmian Canal Commission.
Second Vice-President, Panama Railroad Company.

Misdirected Letters.

Ancon, C. Z, October 5, 1910.

The following insufficiently addressed letters originating in the United States and its possessions have been received in the office of the Director of Posts, and may be secured upon request of the addressee:

Austen, Alfred R.
Baker, Edward L.
Barbour, Jno. H.
Barrett, Fred
Barton, Robt. C.
Bray, Mrs. Walter
Breen, Mrs. W.
Briggs, Ray M.
Brown, Mrs. Henry A.
Coe, G. S.
Cole, Harry O.
Chamberlain, Mrs. Chs.
Clark, Frank
Cullen, James
Depuswa, Joseph
Duncan, B. B.
Ellis, H. Neil
Ferguson, John L.
Gibbs, Wm.
Griessinger, Charles
Haber, Miss Jennie
Hammell, Otto
Hull, J. B. (4th class)
Joyce, James W.
Lichly, Mrs. Theodore
Lyon, Willis E.
Mallory, Bob
McCullum, C. S.
McGann, John T.
McNeill, Allie H.
Nicolo, U. Piras
O'Sullivan, Michael
Sawtelle, Harrie W.
Simpson, Mrs. Elizabeth
Thorpe, Mrs. G. D.
Waindrift, F. R.
Weiss, John
Wilson, John
Winford B.
Wonson, Miss Katherine

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending October 12, 1910, (75th meridian time):

	Low.	High.	Low.	High.	Low.
	A. M.	A. M.	A. M.	P. M.	P. M.
October 6......	......	5:27	11.43	5.47	11.56
			P. M.		
October 7......	......	5.55	12.17	6.17	......
October 8......	12.28	6.24	12.52	6.47	......
October 9......	1.02	6.54	1.27	7.20	......
October 10.....	1.38	7.28	2.08	8.01	......
October 11.....	2.21	8.12	2.58	8.54	......
October 12.....	3.22	9.10	4.03	10.05	......

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, October 1, 1910. All heights are in feet above mean sea level.

DAY AND DATE	STATION.				
	Vigia	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun. Sept. 25...	138.5	100.7	50.5	17.9	17.3
Mon. Sept. 26..	137.8	101.0	54.9	19.7	17.9
Tues. Sept. 27..	138.9	100.4	50.3	18.3	17.8
Wed. Sept. 28..	139.2	101.6	55.8	21.0	19.0
Thurs. Sept. 29.	129.6	95.9	51.1	20.9	19.2
Fri. Sept. 30...	129.7	95.6	49.2	19.3	19.0
Sat. Oct. 1.....	128.7	95.1	49.0	18.7	18.4
Height of low water.......	125.0	92.0	46.0		

The following vessels arrived at, and departed from, the port of Balboa during the week ending October 1:

Arrivals—September 25, *Quito*, from Buenaventura; *Newport*, from San Francisco; September 27, *Trinculo*, from Port Harford; *Cavalier* (yacht) from Guayaquil; September 29, *Vicksburg*, from Corinto; *Arica*, from Guayaquil; September 30, *Hornelen*, from Puget Sound; *Aysen*, from south ports.

Departures—September 25, *Ecuador*, to Guayaquil; *Mexico*, to south ports; September 29, *City of Para*, to San Francisco; *Trinculo*, to Port Harford; September 30, *Quito*, to Buenaventura and Tumaco.

Launch Service to Taboga.

The steamer *Sanidad* leaves the dredge landing at Balboa at 9 o'clock Tuesday, Thursday and Saturday mornings. On the return trip it arrives at Balboa about 4.30 p.m. in time to make connections for the 5.30 train at Panama.

COMMISSARY DEPARTMENT.

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning October 4.

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	7
Shoulder, neck trimmed off, (4 lbs. and over), per pound	10
Entire forequarters (not trimmed) 10 pounds and over, per pound	9
Legs, (8 to 10 pounds), per pound	19
Cutlets, per pound	20
Short cut chops, per pound	22
Lamb—Stewing, per pound	7
Entire forequarters, neck trimmed off, per pound	10
Legs (5 to 8 pounds), per pound	24
Chops, per pound	26
Cutlets per pound	26
Veal—Stewing, per pound	10
Shoulder for roasting (not under 4 pounds), per pound	15
Loin for roasting, per pound	19
Chops, per pound	22
Cutlets, per pound	26
Pork cuts, per pound	22
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	9
Corned, per pound	12, 14, 16
Chuck roast, (3 pounds and over), per pound	13
Pot roast, per pound	15
Rib-roast, second cut (not under 3½ pounds), per pound	18
Rib roast, first cut (not under 3 pounds), per pound	20
Sirloin roast, per pound	21
Rump roast, per pound	21
Porterhouse roast, per pound	21
Steak, Chuck, per pound	14
Round, per pound	15
Rib, per pound	20
Sirloin, per pound	21
Porterhouse, per pound	21
Rump, per pound	21
Tenderloin, per pound	24

MISCELLANEOUS.

Livers—Beef, per pound	10
Calf, each	60
Half, each	30
Sausage—Pork, per pound	17
Bologna, per pound	14
Frankfurter, per pound	14
Leberwurst, per pound	14
Sweet bread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	†32
Eggs, fresh, ½ dozen only	†18
Bluefish, fresh, per pound	16
Cod, fresh, per pound	10
Halibut, fresh, per pound	13

POULTRY AND GAME.

Chickens—Fancy Roasting, large, each	1.50
medium, each	1.30
Fowls, each	70, 82, 93, 1.04, 1.15
Ducks, large, each	1.50
medium, each	1.30
Broilers, each	75
Turkeys, per pound	30
Squabs, each	35
Capons, each	2.50
Geese, fatted, each	2.60
Pheasants, each	70, 1.00
Partridges, each	50
Grouse, each	85

CURED AND PICKLED MEATS.

Ham—English York Cut, per pound	30
German, Westphalia, per pound	36
Sugar cured, per pound	24
Sugar cured, sliced, per pound	27
Half, for boiling, per pound	25
Boiled, per pound	32
Hocks, per pound	‡18
Bacon—Breakfast, whole piece, per pound	30
Breakfast, sliced, per pound	31
Beef, salt, family, per pound	12
Pork, salt, family, per pound	16
Ox tongues, each	80
Pigs' feet, per pound	10
tongues, per pound	16
Mutton, mess, per pound	7

DAIRY PRODUCTS.

	Price.
Butter—Creamery special, per pound	40
Cheese—Roquefort, per pound	38
Philadelphia Cream, cake	10
Young America, per pound	22
Swiss, per pound	26
Edam, each	1.00
Camembert, in 2-pound tins, tin	38
Camembert, in ½-pound tins, tin	14
Neufchatel, each	6
Gouda, per pound	34
Parmesan, per pound	35
Milk, Briarcliff, bottle	**25
Buttermilk, bottle	**15

VEGETABLES AND FRUITS.

Beets, per pound	3½
Celery, per head	6
Carrots, per pound	3½
Cabbage, per pound	3½
Cucumbers, per pound	5
Lettuce, per head	5, 7, 10
Onions, per pound	3½
Potatoes, white, per pound	3½
sweet, per pound	2½
Squash, per pound	4
Tomatoes, per pound	8
Turnips, per pound	3
Yams, per pound	3½
Apples, per pound	5
Grapes, per pound	8
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12
Peaches, per pound	8, 10
Pears, per pound	8
Plums, per pound	10

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*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from Commissaries; no orders taken for delivery.

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal, Colon and Balboa during the week ending October 1, 1910:

Sibiria, September 26, from New York, with 53 kegs bolts, 184 cases fuzes for stock.

Atenas, September 29, from New Orleans, with 30 bundles push carts, 6 barrels wire rope clips, 523 pieces oak lumber, 687 pieces yellow pine lumber, 3,318 bales hay for stock; 89 pieces oak lumber, 672 pieces yellow pine lumber for Mechanical Division; 133 tons dump car parts for Cristobal shops (for erection).

Haakon VII, September 29, from Baltimore with 16,240 cases dynamite, 15,000 bundles tie plates, 180 pieces frogs, 50 crates wicker chairs, 21 cases steel bars, 1,250 cases bricks, 3,334 pieces sewer pipe, 1,580 kegs wire nails, 431 pieces black pipe for stock; 48 cases castings, 5 bundles castings, 4,223 pieces steel bars for Pacific Division; 174 pieces castings, 425 car wheels, 490 pieces steel plate for Mechanical Division; 16 pieces castings, 26 bundles castings, 4 cases castings, 263 pieces pipe for Atlantic Division.

Almirante, September 30, from New York, with 210 coils rope, 500 cases linseed oil for stock.

Hornelen, September 30, from Seattle, with 24,370 pieces Douglas fir lumber, 16,031 cross-ties, 4,092 switch ties, 13 cases blasting caps for stock; 473 pieces piles, 6,714 pieces Douglas fir lumber, 12 pieces spuds for Atlantic Division.

Advance, September 30, from New York, with 24 cases ground levers, 24 crates stoves, 30 sets rims, 25 cases air brake material, 100 drums welding compound, 1,009 kegs and 94 cases bolts, 192 drums calcium carbide, 26 cases iron unions, 10 cases sheet brass, 14 cases paper, 25 bundles rail tongs, 38 cases valves for stock; 25 packages machinery, 10 coils electrical supplies, 24 cases boots for Atlantic Division; 50 cases incandescent lamps, 99 pieces steel castings for Mechanical Division; 60 pieces steel castings for Central Division; and a miscellaneous cargo, the whole consisting of 2,046 packages, weighing 300 tons.

Rainfall from September 1 to 30, Inclusive.

MIDNIGHT TO MIDNIGHT.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Chorrera	2.50	20	8.12
Ancon	1.09	4	4.84
Balboa	2.17	4	5.18
Miraflores	2.35	5	9.56
Pedro Miguel	2.36	4	7.68
Rio Grande	2.16	22	10.20
Central Section—			
Culebra	1.72	25	10.09
Camacho	2.10	26	11.73
Empire	1.91	25	8.99
Gamboa	2.37	4	12.24
Alhajuela	3.18	24	18.44
El Vigia	2.60	1	17.86
Gorgona	3.00	4	13.31
San Pablo	3.80	4	15.92
Tabernilla	6.19	4	19.17
Bohio	3.73	4	16.82
Monte Lirio	4.48	5	22.22
Atlantic Section—			
Gatun	2.71	4	12.72
Brazos Brook	3.43	5	12.21
Cristobal	2.19	18	12.05
Porto Bello	2.18	27	13.15
Nombre de Dios	1.25	17	6.90

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company, of the Royal Mail Steam Packet Company, of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Allianca	P. R. R.	Wednesday	Oct. 5
Colon	P. R. R.	Tuesday	Oct. 11
Advance	P. R. R.	Monday	Oct. 17
Panama	P. R. R.	Saturday	Oct. 22
Allianca	P. R. R.	Friday	Oct. 28
Colon	P. R. R.	Friday	Nov. 4
Advance	P. R. R.	Thursday	Nov. 10
Panama	P. R. R.	Wednesday	Nov. 16
Allianca	P. R. R.	Tuesday	Nov. 22
Colon	P. R. R.	Monday	Nov. 28

CRISTOBAL TO NEW YORK.

Advance	P. R. R.	Wednesday	Oct. 5
Cristobal	P. R. R.	Monday	Oct 10
Panama	P. R. R.	Tuesday	Oct. 11
Allianca	P. R. R.	Monday	Oct. 17
Colon	P. R. R.	Sunday	Oct. 23
Advance	P. R. R.	Saturday	Oct. 29
Panama	P. R. R.	Friday	Nov. 4
Allianca	P. R. R	Thursday	Nov. 10
Colon	P. R. R.	Wednesday	Nov. 16
Advance	P. R. R.	Tuesday	Nov. 22
Panama	P. R. R.	Monday	Nov. 28
Allianca	P. R. R.	Sunday	Dec. 4

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 4th and 25th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J

NEW YORK TO COLON.

Santa Marta	U. F. C.	Thursday	Sept. 29
Atrato	R.-M.	Saturday	Oct. 1
Metapan	U. F. C.	Thursday	Oct. 6
Prinz Joachim	H.-A.	Saturday	Oct. 8
Zacapa	U. F. C.	Thursday	Oct. 13
Tagus	R.-M.	Saturday	Oct. 15
Almirante	U. F. C.	Thursday	Oct. 20
Prinz Aug. Wilhelm	H.-A.	Saturday	Oct. 22
Santa Marta	U. F. C.	Thursday	Oct. 27
Oruba	R.-M.	Saturday	Oct. 29
Metapan	U. F. C.	Thursday	Nov. 3
Prinz Joachim	H.-A.	Saturday	Nov. 5
Zacapa	U. F. C.	Thursday	Nov. 10
Magdalena	R.-M.	Saturday	Nov. 12

COLON TO NEW YORK.

Almirante	U. F. C.	Friday	Oct. 7
Prinz Aug. Wilhelm	H.-A.	Tuesday	Oct. 11
Santa Marta	U. F. C.	Friday	Oct. 14
Oruba	R.-M.	Monday	Oct. 17
Metapan	U. F. C.	Friday	Oct. 21
Prinz Joachim	H.-A.	Tuesday	Oct. 25
Zacapa	U. F. C.	Friday	Oct. 28
Magdalena	R.-M.	Monday	Oct. 31
Almirante	U. F. C.	Friday	Nov. 4
Prinz Aug. Wilhelm	H.-A	Tuesday	Nov. 8
Santa Marta	U. F. C.	Friday	Nov. 11

NEW ORLEANS TO COLON.

Turrialba	U. F. C.	Saturday	Oct. 1
Abangarez	U. F. C.	Saturday	Oct. 8
Atenas	U. F. C.	Saturday	Oct. 15
Turrialba	U. F. C.	Saturday	Oct. 22
Abangarez	U. F. C.	Saturday	Oct. 29
Atenas	U. F. C.	Saturday	Nov. 5

COLON TO NEW ORLEANS.

Atenas	U. F. C.	Thursday	Oct. 6
Turrialba	U. F. C.	Thursday	Oct. 13
Abangarez	U. F. C.	Thursday	Oct. 20
Atenas	U. F. C.	Thursday	Oct. 27
Turrialba	U. F. C.	Thursday	Nov. 3
Abangarez	U. F. C.	Thursday	Nov. 10

COLON TO BARBADOS, CALLING AT TRINIDAD.

Atrato	R.-M.	Tuesday	Oct. 11
Tagus	R.-M.	Tuesday	Oct. 25

The next sailing of the Leyland Line will be as follows: *Jamaican* on or about October 14, for New Orleans, via Kingston, Ja.

Hamburg-American steamers leave for New York at 10 a. m., and for Port Limon every Tuesday or Wednesday.

Royal Mail steamers leave for New York on alternate Mondays at 10 a. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans leave on Thursday at 3 p. m., and for New York on Friday at 10 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3rd and 20th of each month.

CANAL RECORD

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The Canal Record

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Address all Communications
THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Land to be Leased in Cristobal.

The plot of ground back of the commissary in Cristobal will be leased by the Panama Railroad Company on condition that only fireproof buildings be erected on it in compliance with plans approved by the proper authorities. There are 27 lots 30 by 100 feet, and three smaller lots. The Masons of Colon expect to erect a Masonic temple on one end of the plot.

Panama-David Railroad Survey.

Two of the five Panama railroad engineering parties engaged in the survey of the proposed railroad to David in the province of Chiriqui, and of two projected branch lines, have completed their work in the field, and it is expected that the remaining parties will finish by the middle of November. The completed surveys comprise the section from Empire to Santiago, and the branch line through the province of Los Santos as far as the town of Pedasí. The length of this proposed branch line is approximately 65 miles.

New P. R. R. Pilot Boat.

A new pilot boat has been received by the Panama Railroad Company for use about the harbor at Colon and Cristobal. It is capable of making 15 miles an hour in comparatively smooth water and will accommodate five passengers. It is 35 feet in length (32 feet 9 inches at the water line), has a beam of 7 feet 6 inches, and is equipped with a 40-horsepower gasoline motor situated well amidship and enclosed. The vessel is provided with a melon folding hood of canvas mounted on a folding brass frame.

Canal Work in September.

The grand total of Canal excavation in September was 2,687,088 cubic yards, of which 2,621,731 cubic yards were charged to "work excavation" and 65,357 cubic yards to "plant." The dry excavation amounted to 1,717,986 cubic yards and was principally by steam shovels. The dredges removed 969,102 cubic yards in addition to the amount pumped into Gatun Dam by suction dredges. The progress on the locks at Gatun, Pedro Miguel and Miraflores is referred to elsewhere in this issue.

In the Atlantic Division, the total excavation was 603,070 cubic yards. Of this total, 124,753 cubic yards were dry excavation and the remainder was removed by the dredges in the Atlantic entrance.

The total excavation in the Central Division was 1,574,238 cubic yards, all of which was chargeable to work excavation. All records for excavation in any previous September were surpassed.

In the Pacific Division the total excavation was 509,780 cubic yards, all but 18,995 cubic yards of which was taken out by the dredges at the Pacific entrance.

A detailed statement of the excavation and a summary of the work on the locks and dams follow:

ATLANTIC DIVISION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation
Dry excavation—	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*
Locks, Dam and Spillway	103,040	21,713	124,753
Mindi	....	....	....
Total	103,040	21,713	124,753
Wet excavation—			
Atlantic entrance	451,873	26,444	478,317
Locks, Dam and Spillway	....	....	....
Total	451,873	26,444	478,317
Total wet and dry excavation	554,913	48,157	603,070

CENTRAL DIVISION.

All dry excavation—			
Culebra Cut	1,339,948	....	1,339,948
Chagres section	234,290	....	234,290
Obispo Diversion	....	....	....
Total	1,574,238	....	1,574,238

PACIFIC DIVISION.

Dry excavation—			
Locks, Dams and Spillways	18,995	....	18,995
Diversions	....	....	....
Prism, south of Pedro Miguel Locks	....	....	....
Total	18,995	....	18,995
Wet excavation—			
Pacific entrance	473,585	17,200	490,785
Miraflores Locks	....	....	....
Diversions	....	....	....
Total	473,585	17,200	490,785
Total wet and dry excavation	492,580	17,200	509,780

TOTAL CANAL EXCAVATION.

Dry excavation	1,696,273	21,713	1,717,986
Wet excavation	925,458	43,644	969,102
Total	2,621,731	65,357	2,687,088

Mean rainfall along Canal (eleven stations) 12.03 inches.

By "Work" Excavation is meant excavation actually made for one of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc.; that is, it represents material taken from the area to be occupied by the Canal, and constitutes excavation useful for the completed Canal.

By "Plant" Excavation is meant excavation outside of any of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc. It includes material necessary to be excavated for construction purposes only and is chargeable against the particular plant item for which it is performed, such as Prism, Diversions, Locks, etc.

DAM AND LOCK CONSTRUCTION.

MATERIAL.	Atlantic.	Pacific.	Total.
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*
Fill placed in dams	686,275	11,220	697,495
Concrete laid in locks.	76,721	68,835	145,556
Concrete laid in dams and spillways	4,421	....	4,421

Corozal Recreation Hall.

Favorable action has been taken upon the application of the residents of Corozal for the placing of the recreation hall in that settlement under the direction of the Y. M. C. A. An estimate is being prepared for the additional room and equipment that will be required. It calls for the enlargement of the present building by the addition of two rooms, one, a reading room, and the other, a pool and billiard room. The reading room, which now occupies the front part of the hall, will be converted into an office, and a place for serving light refreshments.

Shovel Work in Chagres District.

On October 4, seven shovels, working in the Chagres construction district of the Central Division, excavated 9,870 cubic yards of material in the working day of eight hours, an average of 1,410 cubic yards per shovel for the day. During this time the shovels were under steam 56 hours and actually digging 44 hours and 30 minutes; waiting for cars, 5 hours and 10 minutes; clearing track, one hour; mining, 40 minutes; cleaning dipper, 4 hours and 30 minutes, and repairing shovel, 10 minutes. These shovels are all of the 65 and 70-ton class, and are digging in very stiff red clay.

Slides in Culebra Cut.

A small slide developed in the west bank of Culebra Cut at Cunette, near Empire, on October 6, and part of an old dump, made by the French and used by the Americans in 1905, moved into the Canal. The break in the bank had been widening for several days and in anticipation of the slide the water main along the west bank had been moved, and the air main securely anchored to the more stable portion of the bank. Several small buildings, forming part of the labor camp, were included in the limits of the slide and were removed. The construction track along the bank from Empire to Las Cascadas was broken, and communication between the Empire and Whitehouse yard by this line is temporarily interrupted. This track serves as the lead to the Whitehouse incline into the Cut, but the part used for this purpose was not injured by the slide.

A portion of the slide at Cucaracha, accelerated by the heavy rains and excavation at the toe of the slope, broke from the main slide

NOTES OF PROGRESS

(*Continued.*)

on October 4, and two steam shovels were put out of service for two or three days.

On account of the movement in the west bank of the Canal at Culebra, the houses of the Chief Quartermaster, and of the Constructing Quartermaster, have been taken down and are being erected on the west slope of the hill at Culebra, back of the administration building.

The dumping of rock in the slide in the east bank of the Cut at Las Cascadas has been suspended, as the rock slope is no longer moving, and it is proposed to drive a line of sheet piling to hold the bank temporarily in case of future trouble and thus prevent another break in the Obispo diversion at this point.

All the material in motion in the slides is included in the estimate of excavation to be done in Culebra Cut, and forms about 15 per cent of the total remaining to be excavated.

Rain and Wind Storm at Cristobal.

On the afternoon of October 5, a heavy rain and wind storm visited Cristobal, and in 45 minutes beginning at 3.30 o'clock, 2.27 inches of rain fell. The wind attained a maximum velocity of 36 miles an hour blowing from the southwest.

Telephone Service Improvements.

The new main exchange telephone switchboard at Empire, through which all the stations at Paraiso, Culebra, Empire, Las Cascadas and Bas Obispo will hereafter be served, was put in operation on Sunday, October 9. The old exchanges at Culebra and Paraiso were abandoned some time ago, but pending the installation of the new apparatus, the Culebra switchboard was temporarily placed in operation in the Empire exchange building. The private branch exchange switchboards in the offices of the Chief Engineer and Chief Quartermaster at Culebra will continue to be operated. A new 100-pair aerial cable has been strung from Empire to Culebra to take care of the Culebra and Paraiso stations, and a 30-pair aerial cable, extending to Las Cascadas, serves the Las Cascadas and Bas Obispo stations. The new switchboard at Empire is of the common battery, lamp signal type, and consists of two sections, wired for a total of 400 subscribers, each section being attended by two operators. It is planned to place an additional cross-arm on the pole line between Las Cascadas and Bas Obispo to provide additional facilities at the latter settlement.

The plan of laying an underground cable to provide permanent telephone facilities along the Panama railroad relocation has been abandoned. A requisition was placed some time ago for the necessary material, but only one proposal was received in response to the advertisement for bids for the cable, and the price, 48 cents a foot, was considered excessive. It has been arranged to construct a telephone line of iron poles, with their bases set in concrete, and the work will be entered upon within a few days, starting at Caimito and proceeding north to Monte Lirio. At Monte Lirio the relocation work is still in progress, but it is expected that it will be completed by the time the telephone construction force reaches there. The new pole route will carry 20 No. 10 copper circuits. At the south end of the relocation, comprising the section between Paraiso and Corozal, the pole line will parallel the railroad right-of-way for most of the distance, but will diverge at the approach to Miraflores tunnel, in order to go around the high part of the hill. There is no immediate demand for the construction of this part of the line, and it will not be started until after the Gamboa-Gatun section is completed.

The telephone line to Toro Point has been finished and is in service. It carries two No. 10 copper circuits, and there is provision for one additional circuit. There are five stations at present, three on one circuit and two on the other. A small switchboard, taken from the old stock in store, will probably be installed there in the near future.

A plan has been adopted for consolidating the number of calls during the busy hours of the morning. From 8 to 8.45 a. m., one of the trunks from Cristobal to Empire is reserved for the use of the branch commissaries in placing their orders for the day with the order department at Cristobal. Each commissary is called up in its turn, and by this method time is saved.

Improvements are to be made in the telephone facilities at the Hotel Tivoli. The existing switchboard will be replaced by another taken from stock now on the Isthmus, but rewired and simplified, and a new system of cables to the various floors will be installed.

Concrete in Gatun Locks.

The concrete work in Gatun Locks is 37 per cent completed, 781,100½ cubic yards out of a total of 2,095,000 having been placed at the close of work on October 8. The rate of advance is about 18,000 cubic yards a week. One of the cableways is operating over the upper locks in which the concrete work is nearly done. The other three cableways are placing concrete in the east side wall and the upper gate sill of the middle locks. The floor of these locks has been completed for the full width and half the length, and the construction of the culvert under the west side wall has been begun.

Between 3 and 4 o'clock on the afternoon of October 6, all hourly records for the cableways were broken by tower No. 1. Strand A of this cableway placed 49 yards, and strand B, 50 yards of concrete during the hour. The concrete foreman at that time receiving the material was H. H. Arras, and the operators in the tower were H. L. Fomon and V. M. Clayborn.

The amount of concrete placed during the week ending October 8, and the total to that date, are shown in the following statement:

DATE	Concrete placed.	Large stone.	Hours worked.	No. of mixers	Total.
	Cu. Yds.	*Cu. Yds.*			*Cu. Yds.*
Oct. 3..	2,834	336¾	90:42	8	3,170¾
Oct. 4..	2,783	259¼	95:16	8	3,042¼
Oct. 5..	2,720	285¼	93:10	8	3,005¼
Oct. 6..	2,741	290¼	91:36	8	3,031¼
Oct. 7..	2,382	328¾	90:18	8	2,710¾
Oct. 8..	2,410	304¾	93:00	8	2,714¾
Total.	15,870	1,805			17,675
Previously reported	....	....	....	......	763,425½
Grand total..	....	....	....	......	781,100½

Timekeeping Rules.

A book containing a compilation of the rules issued to govern timekeeping has been published for the guidance of all employes. In addition to circulars issued heretofore, which have been collected for the first time, it contains a large amount of new information and instructions. The rules in this book supersede all rules on timekeeping published heretofore.

Lock Work at Pedro Miguel.

A statement of concrete laid in the locks at Pedro Miguel during the six 8-hour working days of the week ending October 8, and of the total laid to that date, follows:

DATE.	CUBIC YARDS.			
	Construction plant.	Auxiliary plant.	Large stone.	Total.
October 3.....	1,908	104	4	2,016
October 4.....	2,008	128	....	2,136
October 5.....	2,066	252	2	2,320
October 6.....	1,958	....	3	1,961
October 7.....	2,140	....	....	2,140
October 8.....	1,982	162	5	2,149
Total.......	12,062	646	14	12,722
Previously reported....	....	....	3,308	315,339
Grand total..	....	....	3,322	328,061

Miraflores Locks.

The record of concrete laid in the Miraflores Locks during the six 8-hour working days of the week ending October 8, and of the total to that date, follows:

DATE	AUXILIARY PLANT.			
	2-Cubic yard mixers.	½-Cubic yard mixers.	Large stone.	Total.
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*
October 3.....	438	442	60	940
October 4.....	464	469	30	963
October 5.....	508	359.5	40	907.5
October 6.....	576	482	35	1,093
October 7.....	268	469	15	752
October 8.....	437	354.5	15	806.5
Total.......	2,691	2,576	195	5,462
Previously reported....	....	....	618	29,929
Grand total..	....	....	813	35,391

Ancon Rock Crusher.

A statement of the rock crushed at Ancon quarry during the week ending October 8, follows:

DATE	Hours worked.	Cubic Yards.
October 3........................	6:10	2,035
October 4........................	5:35	2,020
October 5........................	7:10	2,610
October 6........................	8:00	2,380
October 7........................	8:00	2,505
October 8........................	8:30	2,900
Total........................	43:25	14,450

Porto Bello Rock Crusher.

A statement of the work done at Porto Bello crusher, by days, for the week ending October 8, follows:

DATE.	Hours worked.	Cubic Yards.
October 3........................	9:50	3,733
October 4........................	6:30	2,428
October 5........................	10:13	2,516
October 6........................	10:08	2,670
October 7........................	9:20	3,425
October 8........................	7:23	2,873
Total........................	53:24	17,645

Cold Storage Prices.

There are no changes in the prices of cold storage articles from those quoted in last week's issue of THE CANAL RECORD.

TABERNILLA DUMP.

A New Dump to be Made on the Old One.

Work has been begun on the "double decking" of the dump at Tabernilla, that is, an entirely new dump about 20 feet high is being made on top of the present dump, which is already from 20 to 25 feet above the level of the surrounding country and about 60 feet above sea level. At present, the work of imposing the new dump is confined to that section on which cars are unloaded from the right side, because this is the section of the present dump on which the "leads" or spur tracks are too long for economical wasting of spoil. Broadening the dump is impossible, because it is already encroaching on the Panama railroad right-of-way and the Tabernilla River. About three weeks ago the work of raising the track at the north end of the dump was begun, and when the first lead is completed there will be 2,000 feet of track on a one per cent grade rising from the beginning of the yard to a height of 20 feet, and beyond that, a 4,000-foot stretch of level dump at 20 feet above the present elevation.

The dump at Tabernilla is the largest on the Canal work and most of the spoil dumped there is from the north slope of Culebra Cut. Its content, as compared with other large dumps, on June 30, 1910, was as follows:

	Cu. Yds.
Tabernilla	15,080,749
Miraflores	6,963,135
Balboa and Naos Breakwater	9,397,215
Relocation of P. R. R. (Gamboa to Caimito)	4,508,219

All the material dumped at Tabernilla is wasted, and when the Canal is finished the dump will be a level, fan-shaped mound of earth whose top will be beneath the surface of Gatun Lake. Dumping at this point was begun in 1906 and has continued without cessation. The location was chosen, because it was near the main line of the Panama railroad, was well outside the Canal prism, and afforded a plot of low level ground two miles long and almost as wide. At first trestles were driven and the cars were dumped or ploughed clean on these trestles. When a trestle was filled the dump was extended by laying the track on "cribbing", or on a pile tail trestle, and broadened by throwing the track over to the edge of the fill. The material dumped here has been the run of the Cut, soft earth, clay, soft rock and hard rock. On this apparently barren material a small jungle has grown up consisting of a few trees with trunks the girth of a man's wrist, and a thick growth of grasses and bushes. On material dumped only two years ago hardy saplings are now growing.

A year ago the dump reached the summit of its activity when 60 trainloads of rock and earth were wasted each day and five unloaders were kept busy. When the trestles on the relocation of the Panama railroad north of Gamboa were ready the trains were gradually diverted from Tabernilla until at present only 20 a day are unloaded there and only two unloaders are required. The increase in the amount of material hauled from Culebra Cut to Gatun Dam has also lessened the dumping at Tabernilla. The force at present employed consists of 15 white Americans and 225 laborers. A comparative statement of the amount of material wasted at Tabernilla; that placed in other large dumps of the Central Division during the fiscal year 1910, and of the amounts dumped prior to July 1, 1909, follows:

DUMP.	Cubic Yards.		
	Prior to July 1, 1909.	Fiscal year 1910.	Total.
Tabernilla	10,184,800	4,895,949	15,080,749
P. R. R. relocation Gamboa-Caimito	1,226,233	3,281,986	4,508,219
Miraflores	3,846,657	3,116,478	6,963,136
Balboa and Naos Breakwater	5,562,124	3,835,091	9,397,215
Gatun Dam	401,184	1,157,494	1,558,678

Balboa Sand Distribution.

A total of 42,535 cubic yards of sand was shipped from Balboa during the month of September, which constitutes the largest amount so far delivered in any one month. All of the sand, with the exception of a few hundred yards, was transported to the storage piles at Pedro Miguel and Miraflores. The distribution in detail follows:

DESTINATION.	Number of Cars.	Cubic Yards.
Pacific Division	2,778	41,670
Atlantic Division	2	50
Central Division	25	385
Mechanical Division	5	125
Quartermaster's Department	5	125
Panama railroad	6	150
Balboa shipways	2	30
Total	2,823	42,535

Steam Shovelmen and Dredgemen.

The I. B. of S. S. and D. M. will hold its regular meeting Sunday, October 16, 1910, at the I. C. C. lodge hall, Empire, at 2.30 p. m. It is very important that all brotherhood men attend this meeting.

WALTER P. TUDOR,
Secretary and Treasurer.

Empire, C. Z., October 9, 1910.

Band Concert.

The Isthmian Canal Commission Band will give a concert at Culebra, C. Z., Sunday, October 16, 1910, at 5.45 p. m. The program follows:

1. March—*The Coming Regiment* ....Conterne
2 Overture—*Raymond*..................Thomas
3 Intermezzo—*Bitter Sweets*............Engleman
4 Selection—*Bright Eyes*................Hoschna
5 Waltz—*Cupid Astray*...................Rolfe
6 Sextet from Lucia.....................Donizetti
7 Medley Selection—*Amina*.............La Farge

Introducing "When Two Love Dearly," "Come After Breakfast," "To Err Is Human To Forgive Divine," "I Wish I Had My Old Girl Back Again," "That Teasing Rag," "My Way to Heaven Is Through Your Love, Sweetheart," "I'm Not That Kind of a Girl" and "Amina."

8 Barn Dance—*By the Light of the Silvery Moon*.............................Edwards
9 March—*Militar*........................France

CHAS. E. JENNINGS, *Musical Director.*

The next concert will be given at Las Cascadas, October 23, at 6 p. m.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, October 8, 1910. All heights are in feet above mean sea level.

DAY AND DATE	STATION.				
	Vigia	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sunday, Oct. 2	128.7	95.0	48.4	18.1	17.8
Mon. Oct. 3	128.8	94.8	48.3	17.6	17.4
Tues. Oct. 4	130.0	95.7	48.9	17.1	16.9
Wed. Oct. 5	129.6	95.3	49.0	17.1	16.8
Thurs. Oct. 6	130.4	95.9	49.9	17.5	16.9
Friday, Oct. 7	127.8	94.2	47.8	17.1	16.8
Sat. Oct. 8	130.1	95.7	49.3	16.8	16.6
Height of low water	125.0	92.0	46.0		

STEAM SHOVEL RECORDS.

Work of Central Division Shovels During the Month of September.

During the month of September, the total amount of material excavated in the Central Division was 1,574,238 cubic yards, of which 459,473 cubic yards were classified as earth, and 1,114,765 cubic yards as rock. Of this quantity, 1,572,064 cubic yards were removed by steam shovels, and 2,174 cubic yards by orange peel cranes.

The high record for the month was made by shovel No. 212, working 24 days in the Culebra district, which excavated 52,250 cubic yards of rock and earth. The second best record of the month was made by shovel No. 208, working 24 days in the Culebra district, which excavated 51,775 cubic yards of rock and earth.

The best record for a shovel of the 70-ton class was made by shovel No. 108, working 25 days in the Chagres district, which excavated 35,621 cubic yards of earth.

Shovel No. 208, working in the Culebra district, made the high record for one day by excavating 3,192 cubic yards of rock and earth on September 26.

Shovel No. 108, working in the Chagres district, excavated 1,890 cubic yards of earth on September 17, and this was the high record for one day for a 70-ton shovel during the month.

Except where noted, monthly records are computed by place measurement, while the daily records are based on car measurement. The best records for the month and for one day in each district are shown below:

BEST RECORDS FOR THE MONTH.

CHAGRES DISTRICT.

Shovel No.	CUBIC YARDS.			No. of days at work.
	Earth.	Rock.	Total.	
108	35,621	....	35,621	25
104	30,475	....	30,475	25

EMPIRE DISTRICT.

Shovel No.	Earth.	Rock.	Total.	No. of days at work.
228	....	50,000	50,000	25
221	....	38,952	38,952	25

CULEBRA DISTRICT.

Shovel No.	Earth.	Rock.	Total.	No. of days at work.
212	13,300	38,950	52,250	24
208	12,944	38,881	51,775	24

BEST RECORDS FOR ONE DAY.

Shovel.	Location.	Date.	Character of material excavated.	Cubic Yards.
108	Chagres	Sept. 17	Earth	1,890
108	Chagres	Sept. 27	Earth	1,810
104	Chagres	Sept. 21	Earth	1,740
228	Empire	Sept. 1	Rock & earth	2,717
228	Empire	Sept. 2	Rock & earth	2,546
229	Empire	Sept. 29	Rock & earth	2,470
221	Empire	Sept. 12	Rock & earth	2,256
208	Culebra	Sept. 26	Rock	3,192
212	Culebra	Sept. 27	Rock	3,021
231	Pedro Miguel	Sept. 20	Rock & earth	2,014
231	Pedro Miguel	Sept. 12	Earth	2,166
109	Pedro Miguel	Sept. 1,2,14	Earth	1,040

Colon Club.

The regular dance of the Colon Club on Saturday evening, October 15, will be dispensed with, as on that evening the floor will be given over to the philanthropy department of the Woman's club for the annual charity ball.

A. A. GREENWAY, *Secretary.*

Colon, R. P., October, 4 1910.

Launch Service to Taboga.

The steamer *Santdad* leaves the dredge landing at Balboa at 9 o'clock Tuesday, Thursday and Saturday mornings. On the return trip it arrives at Balboa about 4.30 p.m. in time to make connections for the 5.30 train at Panama.

RECORD OF CANAL WORK SINCE AMERICAN OCCUPATION.

MONTHLY TOTALS BY CUBIC YARDS OF EXCAVATION AND LOCK AND DAM CONSTRUCTION.

[*All figures are of work useful for the completed Canal.*]

DRY EXCAVATION.

CENTRAL DIVISION.

MONTHS.	CULEBRA SECTION.*							CHAGRES SECTION.**			
	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1907.	1908.	1909.	1910.
January	...	70,650	120,990	566,750	1,227,022	1,150,249	1,323,693	...	169,447	389,399	175,802
February	...	75,200	168,410	639,112	1,248,265	1,194,454	1,259,173	...	200,145	450,182	286,309
March	...	132,840	239,178	815,270	1,290,885	1,434,597	1,509,728	...	324,233	619,491	484,846
April	...	126,749	213,177	879,527	1,242,574	1,272,746	1,288,845	...	329,483	510,020	428,777
May	27,556	75,935	196,209	690,365	960,840	1,126,963	1,099,279	...	235,902	386,170	248,974
June	32,551	76,905	212,623	624,586	1,134,032	1,242,134	1,305,141	...	322,145	275,900	164,389
July	31,599	78,570	159,789	770,570	1,121,325	1,200,828	1,153,810	...	345,757	233,897	166,106
August	35,056	49,210	244,823	786,866	1,171,927	1,173,370	1,377,714	2,900	368,683	231,543	234,404
September	25,220	44,085	291,452	753,468	1,122,860	1,235,978	1,339,948	21,546	346,948	235,818	234,290
October	19,695	52,940	327,009	834,499	1,160,101	1,302,901	...	25,627	424,911	221,409	...
November	28,860	60,540	221,642	790,632	1,022,576	1,070,792	...	44,044	336,390	93,619	...
December	42,935	70,630	307,689	1,025,485	1,210,046	1,152,022	...	98,652	383,948	105,044	...
Totals	243,472	914,254	2,702,991	9,177,130	13,912,453	14,557,034	11,657,331	192,769	3,787,992	3,752,492	2,423,897

MONTHS.	ATLANTIC DIVISION.					PACIFIC DIVISION.					
	COLON (MINDI)†		GATUN LOCKS, DAM AND SPILLWAY.††			PEDRO MIGUEL LOCKS.‡			MIRAFLORES LOCKS, DAMS AND SPILLWAY.‡‡		
	1909.	1910.	1908.	1909.	1910.	1908.	1909.	1910.	1908.	1909.	1910.
January	45,664	...	292,155	102,690	125,011	...	83,726	27,320	7,203	61,202	31,479
February	46,046	...	282,797	95,031	123,738	...	58,242	9,486	39,046	53,689	15,300
March	70,713	...	374,598	90,051	132,007	...	95,624	6,784	73,194	51,417	18,184
April	74,368	...	373,456	70,009	103,243	...	101,365	9,129	98,943	60,060	12,148
May	71,407	...	266,747	52,786	82,958	...	57,523	10,405	73,023	47,588	20,250
June	80,101	...	244,951	36,556	88,088	13,228	70,971	8,420	68,691	55,653	21,994
July	82,378	...	213,359	39,058	95,503	22,648	77,503	4,410	104,369	50,999	11,990
August	66,249	...	188,262	40,346	99,737	22,217	58,025	12,789	94,248	35,446	17,548
September	61,437	...	145,990	49,945	103,040	28,833	48,825	10,405	90,923	31,803	8,590
October	72,643	...	154,064	57,321	...	48,875	39,002	...	74,700	25,349	...
November	42,009	...	118,278	63,452	...	55,401	20,207	...	52,930	18,644	...
December	...	...	119,904	96,590	...	65,578	28,342	...	69,650	20,083	...
Totals	713,015	...	2,774,561	793,835	953,325	256,780	739,355	99,148	846,920	511,933	157,483

*Total to October 1, 1910, 53,164,665 cubic yards.

**Total to October 1, 1910, 10,157,150 cubic yards.

†Total to October 1, 1910, 1,476,821 cubic yards; in this total are included 172,851 cubic yards removed in 1907, and 590,955 cubic yards removed in 1908.

††Total to October 1, 1910, 5,888,528 cubic yards; in this total are included 26,628 cubic yards excavated October to December, 1906, and 1,340,179 cubic yards in 1907; there were also 38,425 cubic yards removed by dredges at Gatun Dam site in 1907.

‡Total to October 1, 1910, 1,095,283 cubic yards.

‡‡Total to October 1, 1910, 1,516,336 cubic yards; there were also 78,233 cubic yards excavated at Balboa locks and dams in 1907; and 239,891 cubic yards at different points in prism to October 1, 1910.

WET EXCAVATION.

MONTHS.	ATLANTIC DIVISION.						PACIFIC DIVISION.						
	ATLANTIC ENTRANCE.§				GATUN LOCKS		PACIFIC ENTRANCE.§§						Miraflores Locks.§§§
	1907.	1908.	1909.	1910.	1908.	1909.	1905.	1906.	1907.	1908.	1909.	1910.	1910.
January	111,100	490,701	521,050	510,055	...	97,043	...	95,940	94,710	460,250	469,529	518,936	...
February	110,002	427,722	444,910	493,448	...	132,291	...	95,940	93,480	663,519	671,477	285,791	...
March	84,145	546,886	461,208	412,325	...	141,838	...	116,820	92,319	783,281	865,696	462,588	...
April	69,889	496,366	470,635	190,574	...	17,938	...	110,700	104,855	676,539	731,767	534,322	...
May	133,847	564,386	315,370	447,578	...	52,011	...	112,340	122,157	530,466	720,753	484,509	...
June	124,118	572,749	182,575	458,021	...	38,829	50,676	62,697	133,575	656,621	844,685	475,486	...
July	109,922	625,497	348,451	423,092	...	...	41,533	98,400	108,338	696,170	733,181	515,782	...
August	194,297	638,217	422,846	508,829	...	...	54,530	111,930	168,284	737,774	623,263	506,969	...
September	403,842	624,776	410,574	451,873	...	...	114,308	105,780	153,975	750,080	662,976	473,585	...
October	415,120	505,260	314,778	...	...	...	81,836	97,170	357,122	762,276	720,920	...	...
November	422,797	570,832	457,889	...	...	...	71,176	92,988	365,423	609,089	627,791	...	...
December	442,835	679,604	489,121	...	8,583	...	71,094	90,528	349,551	729,960	727,460	...	...
Totals	2,621,914	6,742,996	4,839,407	3,395,795	8,583	479,950	485,153	1,191,233	2,143,789	8,056,025	8,399,498	4,257,968	...

§Total to October 1, 1910, 19,527,577 cubic yards; in this total are included 399,820 cubic yards excavated in 1905, and 1,027,645 cubic yards in 1906.

§§Total to October 1, 1910, 24,533,666 cubic yards; there were also 172 cubic yards removed by steam shovels during October, 1908.

§§§Total to October 1, 1910, 309,647 cubic yards, all of which was taken out by dredge in 1909.

CONCRETE IN LOCKS AND DAMS.

MONTHS.	GATUN LOCKS.			PEDRO MIGUEL LOCKS.			MIRAFLORES LOCKS.	
	1909.	1910.	1911.	1909.	1910.	1911.	1909.	1910.
January	...	54,136	...	...	16,273	...	...	...
February	...	55,696	...	...	13,218	...	...	146
March	...	60,998	...	...	18,793	...	...	314
April	...	63,227	...	...	24,522	...	...	13
May	...	74,273	...	...	29,576	...	...	27
June	...	89,391	...	...	30,631	...	...	1,603
July	...	84,001	...	...	41,464	...	28	3 672
August	1,298	85,696	...	...	51,264	...	74	6,030
Sept	12,294	76,721	...	2,370	50,702	...	...	18,133
October	29,378	...	...	8,310	...	...	...	...
Nov'mber	30,270	...	...	10,169	...	...	...	...
December	42,832	...	...	13,007	...	...	...	...
Total	116,072	644,139	...	33,856	276,443	...	102	29,938

From March 17, 1909, to October 1, 1910, there were placed in the Spillway of Gatun Dam 95,206 cubic yards of concrete, including 4,421 cubic yards placed in September, 1910; in Miraflores Dam there were placed 321 cubic yards up to October 1, 1910.

FILL PLACED IN DAMS.

MONTHS.	GATUN.*		PEDRO MIGUEL.†	MIRAFLORES.‡	
	1910.		1910.	1910.	
	Wet.	Dry.	Dry.	Wet.	Dry.
January	178,254	236,994	...	...	28,151
February	292,215	271,788	11,510	...	1,438
March	210,387	332,661	22,860	...	5,385
April	242,440	263,437	31,394	...	...
May	249,283	204,275	23,572	...	6,480
June	384,166	271,283	1,350	...	7,356
July	462,092	187,713	...	...	4,290
August	406,606	235,010	...	...	10,898
September	457,637	228,638	...	...	11,220
October	...	...	...	...	...
November	...	...	...	...	...
December	...	...	...	...	...
Total	2,883,080	2,231,799	90,686	...	75,218

*Dry fill begun in January, 1907, and 2,096,477 cubic yards of wet, and 3,241,418 cubic yards of dry fill were placed in 1907, 1908 and 1909.

†170,166 cubic yards placed in dams up to December, 1909, inclusive.

‡138,587 cubic yards of wet fill and 472,091 cubic yards of dry fill were placed in dams up to December, 1909.

CANAL EXCAVATION TO DATE.

By French Companies		78,146,960
French excavation useful to present Canal		29,908,000
By Americans—		
Dry excavation	73,617,079	
Dredges	44,897,848	
Total		118,514,927
May 4 to December 31, 1904	243,472	
January 1 to December 31, 1905	1,799,227	
January 1 to December 31, 1906	4,948,497	
January 1 to December 31, 1907	15,765,290	
January 1 to December 31, 1908	37,116,735	
January 1 to December 31, 1909	35,096,166	
January 1 to September 30, 1910	23,545,540	

TOTALS BY DIVISIONS AND AMOUNT TO BE EXCAVATED.

DIVISIONS.	Amount excavated.		Remaining to be Excavated.	
Atlantic—				
Dry excavation	7,365,349	27,419,884	907,705	15,937,461
Dredges	20,054,535		15,029,756	
Central—				
Culebra Cut	53,164,665	63,321,815	31,022,059	33,803,203
All other points	10,157,150		2,781,144	
Pacific—				
Dry excavation	2,929,915	27,773,228	3,450,227	14,282,175
Dredges	24,843,313		10,831,948	
Grand totals		118,514,927		64,022,839

THE COMMISSARY IN 1910.

Factors in the $5,000,000 Business of the Fiscal Year.

The operations of the commissary department of the Panama railroad aggregated over $5,000,000 in value during the fiscal year ending June 30, 1910. The value of merchandise imported was $3,913,519.14, as compared with $3,386,906.06 for the preceding fiscal year, classified as follows:

Groceries	$1,064,075.27
Hardware	98,902.50
Dry goods	694,476.67
Boots and shoes	165,303.38
Cold storage supplies	1,348,376.57
Furniture	11,918.59
Tobacco	153,986.84
Raw material	325,453.42
Paper, twine, stationery, etc	51,025.90

The chief imports during the year under the classification of "groceries," and a comparison in a number of instances with the amounts imported during the preceding year, were as follows:

ARTICLE.	1909.	1910.
	Pounds.	Pounds.
Baking powder	....	39,922
Biscuits	....	364,982
Cereals	....	412,429
Cocoa	126,468	109,504
Codfish	295,120	597,516
Coffee	203,587	*319,697
Confectionery	....	188,319
Flour	4,809,124	5,363,574
Jams, jellies and preserves	193,586	195,199
Lard	438,360	420,110
Meats, canned	437,842	675,852
Milk, evap. and condensed	1,576,880	2,221,052
Other vegetables in tins	474,192	524,069
Peas and beans in bulk	....	1,128,792
Peas and beans in tins	340,234	471,452
Pickled fish	....	27,250
Pickles and sauces	....	169,460
Pork and beans in tins	53,388	77,586
Preserved fruit	....	766,623
Rice	....	1,629,558
Salmon	222,192	162,960
Sugar	....	3,612,768
Tea	64,400	80,965
Tomatoes in tins	506,080	677,278

*Amount of green coffee roasted at coffee plant.

In meats and dairy products the following quantities were received: Fresh meats, 5,229,306 pounds; cured and pickled meats, 1,046,029 pounds; cheese, 114,192 pounds; eggs, 502,950 dozen; butter, 471,551 pounds; poultry, 429,575 pounds; fresh milk, 41,901 gallons; fresh cream, 22,900 gallons.

Fresh vegetables were imported in the following amounts: White potatoes, 4,586,967 pounds; sweet potatoes, 638,584 pounds; onions, 717,557 pounds; turnips, 122,632 pounds; beets, 26,059 pounds; carrots, 91,830 pounds; cabbage, 656,905 pounds; yams, 424,789 pounds; other vegetables, including celery, tomatoes, squash, etc., 622,484 pounds.

Fresh fruits were purchased abroad as follows: Apples, 526,472 pounds; peaches, 63,944 pounds; pears, 21,780 pounds; plums, 17,706 pounds; grapes, 54,066 pounds; oranges, 236,854 dozen; lemons, 13,574 dozen; grapefruit, 11,837 dozen; limes, 5,493 dozen; 59,724 canteloupes, 10,845 watermelons; other fruits 26,276 pounds.

With few exceptions, there was an increased consumption during the year in all articles under the head of groceries, provisions, fresh vegetables and fruits. The sales and issues to all departments were as follows:

Sales to Isthmian Canal Commission	$1,664,873.66
Sales to United States Government	135,068.36
Sales to others for cash	100,901.78
Sales to others for coupons	3,083,064.13
Issued to departments of the railroad and used in operation of the commissary	229,328.02
Issued to Panama railroad steamships	9,501.84
Condemned and damaged goods, shrinkage, etc	108,779.02
Total	$5,331,516.81
Average sales and issues per month	$444,293.07

The stock on hand on June 30, 1910, aggregated $1,391,342.33, in value, as compared with $810, 696.94 on June 30, 1909.

The annual report of commissary operations for 1909-10 includes a statement of the comparative selling prices of fresh meats, poultry and game, cured and pickled meats, dairy products, vegetables, fruits and groceries at stated periods, viz., April, 1907, 1908, 1909, 1910, and June, 1910. This statement shows that in the face of a constantly advancing wholesale market, goods of the above classes were being sold cheaper in the first half of 1910 than during any previous period of operations covered by the table, with the exception of pork products, on which the advance in price within the last year has been unusual.

Twenty-one commissary stores were in operation on June 30, 1910, and an additional store will shortly be opened at Miraflores. Fourteen of the stores are provided with ice boxes of sufficient size to store meats and other perishable goods. Butchers are employed in eight of the commissaries.

MANUFACTURING PLANTS.

Laundry—During the fiscal year, 2,993,761 pieces were laundered. The average number of employes served monthly was 7,265, and the value of the work performed was $90,797.56.

Bakery—The bakery used 15,631 barrels of flour, and produced 4,892,401 loaves of bread, 504,003 rolls, 130,667 pounds of cake, and 32,243 pies during 1909-10. The making of pies was discontinued in January, as it was found after about a year's experience that it is almost impossible to ship pies in this climate and deliver them to customers in a fresh and palatable condition. A new blender and elevator, equipped with an automatic scale attachment and tempering device for water, was installed during the year. The total value of the bakery product was $219,370.16.

Coffee Roasting Plant—During the year, 319,697 pounds of green coffee were roasted, valued at $77,905.43. Three grades are produced, one a pure Santos of the highest grade, which is sold roasted and ground for 17½ cents a pound; second, a blend made of a Santos base mixed with mild South American grades and Mocha and Java, sold for 25 cents a pound, and third, a pure Mocha and Java coffee, sold for 35 cents a pound. A new 100-pound roaster and a 50-pound grinder were installed.

Ice Plant—Twenty-seven thousand, nine hundred and twenty-eight tons of ice were manufactured during the year, valued at $187,446.95. During the months of April and May, and a part of June, 1910, the ice supply became so short that ice had to be hauled from New York, in addition to buying all the excess ice the local private plants could produce. A tank capable of turning out an additional 25 tons daily was installed on June 17, which relieved the shortage.

Ice Cream Plant—The demand for ice cream was steady, and 91,321 gallons, valued at $62,379.93, were manufactured. The product is carefully packed in standard tubs and shipped out to hotels and stores. Flavors are changed from four to six times a week to insure variety. Only fresh cream and milk, shipped in refrigeration from the United States, crushed fruits and the highest classes of flavoring are used. A building, designed especially for the manufacture of this article, and by which it is expected that its sale can be increased at least 50 per cent, has been constructed.

Automatic Weighing and Packing—A complete automatic weighing and packing department was installed during the year. By this method, flour, beans, peas, rice, coffee, etc., are weighed and packed ready for delivery to customer, thereby saving the waste attendant upon careless weighing, and enabling the storekeeper to sell goods in original packages. During the period from January 1 to June 30, 1910, inclusive, goods to the amount of 2,470,960 pounds were packed in this manner.

Power Plant—A 300-ton compressor, having a capacity for running the entire refrigerating and ice-making plant and affording an opportunity to shut down the other compressors when necessary to repair them, was purchased and is being installed.

Cold Storage Plant—During the year, a loading corridor 21 feet by 136 feet 5 inches was completed, which makes it possible to load all goods requiring refrigeration in a temperature not above 58 degrees Fahrenheit, thus insuring the arrival of this class of goods at destination in a fresh condition. It also provides space for the storage of smoked and pickled meats. A two-story iron and concrete warehouse 50 by 200 feet, made necessary by the enlargement of the bakery in 1909, was erected during the year.

Shooting at Culebra.

J. A. Schaberle, a white American employed in the office of the Chief Engineer, was shot in the bowels while in his quarters at Culebra about 2 o'clock on the morning of October 10, by J. R. Johnson, also an employe of the Chief Engineer's office. Mr. Schaberle was taken to Ancon Hospital where his condition is regarded as critical. Johnson was arrested and will be held pending the result of the injuries to Schaberle. The cause of the shooting is not known further than that Johnson was intoxicated.

Burglar Shot at Corozal.

A demented negro, Alfred Brooks, was shot and killed by E. N. Knapp while leaving the quarters of Mr. Knapp at Corozal at 2 o'clock in the morning of October 7. A coroner's jury returned a verdict of justifiable homicide. Brooks was indicted for the murder of Cornelius McKenzie and Ella Williams near Empire on January 20, 1910, and having been declared insane by a board of three experts, was committed to the asylum for the insane at Ancon Hospital on March 29. He escaped from the asylum on the night of October 6, and probably walked to Corozal.

Missing Men.

Information is wanted concerning the whereabouts of Frank L. Karrer of St. Louis, Mo., who is supposed to be working on the Isthmus of Panama. Any one having knowledge of him is requested to communicate with his mother, Mrs. Marian Karrer, 2926 Oliver street, St. Louis, Mo.

Any one having knowledge of the whereabouts of Granville Harper, a Barbadian, check No. 70958, who was discharged from Ancon Hospital on August 22, is requested to communicate it to THE CANAL RECORD.

Information is requested regarding the whereabouts of Edward O'Neil, who left the Canal service in 1906. Address Mrs. Philip Deubel, 2723 East Allegheny avenue, Philadelphia, Pa.

COLON IMPROVEMENTS.

Plan Approved by Panama and the United States.

The so-called "pyramid plan" for the fill and drainage of Colon, under the special appropriation of $800,000 for sanitary work in Panama and Colon, has been approved by the Government of Panama and by the Acting Chairman of the Isthmian Canal Commission for the United States Government.

Under the approved plan the area to be improved will be drained in four directions from a summit at the intersection of Ninth and E streets, where the elevation of the curb will be 8½ feet above sea level. The elevation of the curb at Ninth and D streets will be 2½ feet above sea level, and the streets between Front and E street will drain into the D street storm sewer. The curb at Second and E streets will be at 2.8 feet above sea level, and at 16th and E streets at 3.88 feet. The plan provides for future extensions of the city to the edge of Manzanillo Bay, beyond the part included in the improvements now under way. At Ninth street and Manzanillo Bay the curb elevation will be 4.61 feet above sea level.

The improvements authorized include the area from Second street to Ninth, between and including D and G streets; and from Ninth to 14th streets, between and including D and E streets.

The allotment for the improvements in Colon is $493,016.22, and of this amount, $127,016.22 has already been expended. The estimated cost of work to be carried on under the approved plan is as follows:

Class of Work.	Material.	Labor.	Total.
Sewer system...	$6,534.80	$16,957.18	$23,491.98
Water system..	20,963.18	9,438.53	30,401.71
Street imp'v'·s.	99,101.69	99,212.50	198,314.19
Street fill......	....	....	63,000.00
Extension sewer force main...	....	....	13,950.00
D street storm sewer........	....	....	136,232.89
G street storm sewer........	....	....	17,000.00
Total........	....	....	$482,390.77

The estimate for a storm sewer in G street does not contemplate the immediate construction of that sewer, but is included, because such a sewer will be necessary if the area east of G street is filled at some future time. The estimate for several items is lower than that published heretofore, because the contingencies for labor have been reduced from 25 per cent to 10 per cent, and the cost of the hydraulic fill has been estimated at 30 cents, instead of 33 cents, as previously given.

The amount of fill in the 22 blocks included within the limits of the present improvement is estimated at 348,180 cubic yards, and the street fill at 210,000 cubic yards, a total fill of 558,180 cubic yards at a cost of $167,454. The fill within the blocks will be paid for by the owners of the property, and streets and land filled at the request of the Panama Railroad Company will be paid for by that company.

Opening of Schools.

The Canal Zone schools for white children opened on October 3 with over 700 pupils in attendance. This number does not include Empire, where the schools will not open until Thursday of this week. The opening of the Empire school will probably raise the total attendance to over 850. This is much larger than the enrollment of last year. There are ten of these schools, situated at Ancon, Pedro Miguel, Paraiso, Culebra, Empire, Las Cascadas, Gorgona, Tabernilla, Gatun, and Cristobal.

As usual, the attendance for the first week in the schools for colored children was low, the enrollment being about 600. There are thirteen of these schools, situated at Balboa, Paraiso, Culebra, Empire, Las Cascadas, Matachin, Gorgona, San Pablo, Tabernilla, Gatun, Mount Hope, Cristobal, and Pleya del Flor.

A manual has been issued for the public schools containing regulations, information, and the course of study at present pursued. A copy of this book will be found at each Commission clubhouse, and parents and others interested in the work of the schools can consult it there.

Red Cross Finances.

A statement of the financial condition of the Canal Zone Chapter of the American National Red Cross for the month of September, 1910, follows:

RECEIPTS.

September 1.	Balance on hand.	$1,962.57	
			$1,962.57

DISBURSEMENTS.

September 23.	Relief of Cuban who was deported..........	$40.00	
			$40.00
September 30.	Balance on hand..........		$1,922.57

JOHN L. PHILLIPS,
Treasurer.

Approved: C. A. DEVOL,
Chairman.

Masonic Banquet.

A banquet for Masons will be given in the Washington Hotel, Colon, on Saturday evening, October 15, by the Masons on the Isthmus of Panama. Masons who are not affiliated with any Masonic organization on the Isthmus are cordially welcomed. Speeches will be made by several prominent Masons. A special train will leave Panama at 6.30 p. m., and will return after the banquet.

Masonic Club Election.

At the meeting of the Corozal Masonic Club held on Wednesday evening, October 5, officers were elected as follows: President, Eli Sims, first vice-president, Frank Cotton; second vice-president, J. C. Keller; secretary, C. H. R. Howe; treasurer, F. E. Hamlin.

Historic Find at Nombre de Dios.

The hull of an old vessel, which has every appearance of having been buried in the sand for several centuries was encountered during the latter part of September by suction dredge *No. 4*, working in the sand deposits at Nombre de Dios. The wreck was lying in the middle of the sand zone, about 300 feet distant from the beach line, and at from 18 to 20 feet below the surface of the ground. The dredge unearthed the old hulk for its entire length of about 60 feet, and has now worked past it. The wood of which the ship was built resembles oak and was put together with wooden pins.

During the time the dredge has been operating in the vicinity of the wreck, its suction pipe has drawn in several hundred pounds of iron, some pieces weighing as much as 40 pounds. The cutter of the dredge also encountered a great many pieces of hard mortar, severing, instead of breaking the pieces, when it came in direct contact with them. The mortar is practically the same as that seen in the ruins of buildings on the Isthmus constructed by the early Spaniards, and possesses remarkable adhesive power. Much of it was found set in and around the ship's iron work, including the hollow parts of a series of iron posts. Another find was that of a quantity of old slugs, bullets, etc., which may have belonged to the ship's magazine.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending October 19, 1910, (75th meridian time):

Date.	High.	Low.	High.	Low.	High.
	A. M.	A. M.	A. M.	P. M.	P. M.
October 13......	......	4.40	10.30	5.15	11.25
October 14......	......	5.55	11.54	6.23	......
October 15......	12.35	6.57	1.03	7.21	......
October 16......	1.32	7.50	1.58	8.12	......
October 17......	2.20	8.38	2.45	8.57	......
October 18......	3.05	9.23	3.30	9.42	......
October 19......	3.47	10.07	4.12	10.25	......

Misdirected Letters.

ANCON, C. Z., October 19, 1910.

The following insufficiently addressed letters, originating in the United States and its possessions have been received in the office of the Director of Posts, and may be secured upon request of the addressee:

Baker, D. T.
Borden, W.
Carter, Robt. H.
Clinton, G. P.
Conner, Lee J.
Duncan, Charles G.
Hoffman, Max
Janney, P. H.
Kefauver, Miss Christine
O'Garro, Edward
Patterson, Cunningham
Sloane, Hugh
Weiser, Wm. M.
Whitsel, F. H.

Rainfall from October 1 to 8, Inclusive.

MIDNIGHT TO MIDNIGHT.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon....................	1.31	4	2.40
Balboa....................	1.45	4	2.82
Miraflores....................	.95	2	2.64
Pedro Miguel....................	.60	2	1.50
Rio Grande....................	.82	4	2.02
Central Section—			
Culebra....................	.62	2	1.32
Camacho....................	.55	2	1.47
Empire....................	.50	2	.97
Gamboa....................	.71	7	1.41
Alhajuela....................	.60	5	.75
El Vigia....................	1.04	6	1.86
Gorgona....................	.40	7	1.03
San Pablo....................	.65	8	1.12
Tabernilla....................	.62	4	1.95
Bohio....................	.82	4	1.84
Monte Lirio....................	.95	4	2.16
Atlantic Section—			
Gatun....................	1.75	5	2.93
Brazos Brook....................	.79	4	1.98
Cristobal....................	2.94	5	3.83
Nombre de Dios....................	.17	5	.35

September Rainfall for Three Years.

STATION.	1908	1909	1910	Station Average	Years of Record	Rai'y days 1910
Pacific Section–	*Ins.*	*Ins.*	*Ins.*	*Ins.*		
Ancon......	5.93	3.86	4.84	7.49	14	18
Balboa......	5.93	4.11	5.18	6.36	12	18
Miraflores...	......	11.85	9.56	10.70	2	20
Pedro Miguel	7.56	10.22	7.68	8.49	3	23
Rio Grande..	15.32	11.23	10.20	11.29	6	24
Central Section–						
Culebra.....	13.74	8.40	10.09	11.35	20	22
Camacho....	12.35	13.01	11.73	11.33	5	24
Empire.....	9.76	7.22	8.99	7.93	7	25
Gamboa....	6.28	7.90	12.24	10.61	28	24
Alhajuela...	13.45	7.50	18.44	12.00	12	24
El Vigia....	17.39	10.91	17.86	15.39	3	25
Gorgona....	......	8.84	13.31	13.17	8	21
San Pablo...	9.42	12.17	15.92	12.72	4	26
Tabernilla...	12.85	13.10	19.17	14.41	4	25
Bohio.......	8.74	10.43	16.82	14.02	17	27
Monte Lirio.	7.88	9.87	22.22	13.32	3	30
Atlantic Section–						
Gatun......	8.52	10.86	12.72	10.91	6	28
Brazos Brook	12.05	9.66	12.21	12.31	5	26
Cristobal....	11.57	16.33	12.05	12.56	40	25
Porto Bello..	8.59	13.99	13.15	11.91	3	25
Nombre de D	......	7.72	6.90	7.31	2	22

SOCIAL LIFE OF THE ZONE.

Women's Clubs and Other Features.

An election of officers for the ensuing six months was held in the Gatun Woman's Club on Friday afternoon, October 7, the following being chosen: President, Mrs. J. H. Stevenson; vice-president, Mrs. A. L. Kerr; secretary, Mrs. A. P. McCulloch; treasurer, Mrs. C. H. Stoddard. A change in the schedule is contemplated by which meetings will be held semimonthly, instead of weekly, as heretofore. The club meets in a room assigned to its use on the second floor of the Commission clubhouse.

An outline plan of the work of the Paraiso Woman's Club was presented at the meeting on Wednesday afternoon, October 5. The program includes papers on topics of current interest, an exhibit of the Federation collection of pictures, a reception to the president of the Canal Zone Federation, a Christmas bazaar, evening entertainments monthly, and a general meeting in December, when Mr. Maurice H. Thatcher will deliver an address. Much interest is taken in the playground movement and the proceeds of the Hallowe'en dance to be held on October 29, will be devoted to that purpose.

An entertainment of moving pictures was held in the social hall, Paraiso, on Wednesday evening, October 5.

The call for the resuming of the sessions of the Gorgona Woman's Club as issued last week was headed "A Better Gorgona" and the efforts of the organization will be directed toward the development of social and civic interests in the village. Under the auspices of the club a farewell reception was tendered to Mr. and Mrs. A. J. Sweet at the Commission clubhouse on Friday evening, October 6. The guests of honor were welcomed by the president of the club, Mrs. Harry Otis, who also presented gifts on behalf of the club and citizens. There was a short program consisting of musical numbers by Miss Elizabeth La Croix, Miss Ethel Otis, and Mr. Earle Buford, and recitations by Miss Jane Calvit and Mr. Wallace Wright. Refreshments were served and the evening closed with an informal reception. Mr. and Mrs. Sweet have been active in club and public life in Gorgona during the past two years; they are leaving for their home in the States.

The Marine Dramatic Club of Camp Elliott will give a performance at Pedro Miguel on Saturday evening, October 15, for the benefit of the Marine Band.

The Empire Woman's Club has elected Mrs. Mary Westberg and Miss Jessie Smith as officers for the ensuing year.

A masked ball was held at Empire by the local organization of Kangaroos on Tuesday evening, October 4, the entertainment being managed by the Tuesday night committee. A special train brought guests from Gorgona and there was a large attendance. Two prizes were awarded for the best costumes, the lady's prize being won by Mrs. Joseph Kirk for her representation of "night", and the gentleman's prize by Mr. Rath for a "hobble" skirt costume. The Tuesday night committee is a regularly organized branch of local work which has in charge arrangements for dances and other entertainments held in the lodge hall weekly.

PERSONAL.

Lieut.-Col. John L. Phillips sailed on the steamship *Panama* for New York on October 11, on his annual leave of absence.

Capt. Courtland Nixon sailed on the United Fruit Company's steamer *Atenas* for New Orleans on Thursday, October 6, on his annual leave of absence.

Mr. W. G. Comber arrived at Cristobal on the *Allianca* on October 11.

Dramatic Entertainment.

The Empire Dramatic and Musical Society will hold an entertainment at the Commission clubhouse, Empire, on Tuesday evening, October 18, when the following program will be given:

Part I.

1 Piano quartet.
Mrs. Shivers, Miss Moulton, Mrs. Dickson, Mr. McAnelly.
2 Hawaiian Melody....................La Meda
Glee Club.
3 Spring Song..........................Pinsuti
Mrs. Ludwig, Mrs. Faure, Mr. Ross, Mr. Conner.
4 Havana
Messrs. Ross and Dickson.
5 Scene from "The Tales of Hoffman"....Offenbach
Mrs. Faure and mixed quartet.
6 "O, That We Two Were Maying".......Smith
Mrs. Ludwig and Mr. Dickson.
7 Aria
Mrs. Faure.
8 Archer's Marching Song.................Thayer
Glee Club.
9 Prison Scene from "Il Trovatore"..........Verdi
Mrs. Ludwig, Mr. Ross, and chorus.

Part II.

"Freezing a Mother-in-Law," a farce in one act.

Cast.

Mrs. Watmuff	Mrs. G. W. K. Newbold
Emily Watmuff	Miss Lucy Clark
Mr. Watmuff	Mr. Perry Brown
Ferdinand Swift	Mr. W. A. Evans, Jr.
Walter Litherland	Mr. C. H. Brodsky

Members: Soprano—Mrs. A. O. Ludwig; contralto—Mrs. L. L. Faure; pianists—Mrs. Mary G. Shivers, Miss Bessie Moulton, Mrs. Alfred Dickson, Mr. H. H. McAnelly; tenors—Messrs. C. H. Brodsky, Mr. H. W. Dohrmann, Alfred Dickson, T. H. Campbell, S. H. Kirkpatrick, W. G. Ross, F. B. Young; basses—Messrs. Perry Brown, H. Bartholomew, F. W. Conner, Oscar King, Keith Kelley, James F. Mackey, A. D. Moore, T. H. Smallwood; dramatic section—Mrs. G. W. K. Newbold, Miss Lucy Clark, Messrs. Perry Brown, W. A. Evans, Jr., C. H. Brodsky. Musical director, Mr. Alfred Dickson.

The society, which is composed of twenty-six members, is divided into two sections, dramatic and musical, with Mr. Alfred Dickson as musical director.

Arrangements will probably be made later to repeat the performance at the clubhouses at Gorgona, Gatun, and Cristobal.

One end of the station shed at Corozal has been fitted up for a freight and baggage room.

WEATHER CONDITIONS, CANAL ZONE, SEPTEMBER, 1910.

Stations.	Press're (reduc'd to mean of 24 hours.)	Temperature.					Mean relative humidity.	Precipitation.			Wind.				
		Mean.	Maximum.	Date.	Minimum.	Date.		Total inches.	Station average.	Number of rainy days.	Total movement (in miles.)	Prevailing direction.	Max. velocity (in miles.)	Direction.	Date.
Cristobal	29.846	78.6	88	15	71	30	91	12.05	12.56	25	3,925	S.E.	24	S.	4
Culebra	29.844	78.6	89	7	69	2	94	10.09	11.35	22	3,219	N.W.	31	N.E.	28
Ancon	29.836	78.7	92	17	70	14	91	4.84	7.49	18	3,816	N.W.	18	S.E.	14

OFFICIAL CIRCULARS.

Rate of Pay for Shoemaker.

CULEBRA, C. Z., October 5, 1910.

CIRCULAR No. 229-N:

The following additional designation and rate of pay is hereby authorized:

Designation.	Unit.	Rate of Pay.
Shoemaker	Hour	$.16

H. F. HODGES,
Acting Chairman and Chief Engineer.

Acting Purchasing Agent.

CULEBRA, C. Z., October 6, 1910.

CIRCULAR No. 353:

Effective October 6, 1910, and during the absence on leave of Captain Courtland Nixon, Mr. Charles L. Parker, Assistant Depot Quartermaster, will perform the duties of Purchasing Agent on the Isthmus.

H. F. HODGES, *Acting Chairman.*

Acting Assistant Chief Sanitary Officer.

ANCON, C. Z., October 10, 1910.

SPECIAL ORDER:

During the absence on leave of Lieut.-Col. John L. Phillips, Assistant Chief Sanitary Officer, Major Robert E. Noble is assigned as Acting Assistant Chief Sanitary Officer and as such, in accordance with paragraph 2, minutes of the 119th meeting of the Isthmian Canal Commission, held in Washington, D. C., January 21, 1907, is authorized to approve for payment all vouchers, payrolls, and public bills relating to this department "By direction of the Chief Sanitary Officer."

W. C. GORGAS,
Chief Sanitary Officer.

Acting Fire Chief.

ANCON, October 10, 1910.

CIRCULAR No. 100:

During the absence on leave of Charles E. Weidman, Fire Chief, Charles F. Koerner, Assistant Fire Chief, is designated Acting Fire Chief.

M. H. THATCHER,
Head of Department of Civil Administration.

Acting Depot Quartermaster.

CULEBRA, C. Z., October 5, 1910.

Mr. CHARLES L. PARKER,
Assistant Depot Quartermaster,
Mount Hope, C. Z.

Sir: Effective October 6, and during the absence of Capt. C. Nixon, on leave, you will act as Depot Quartermaster.

You are authorized to receive and receipt for supplies of the Isthmian Canal Commission consigned to Col. C. A. Devol, or the Chief Quartermaster, Isthmian Canal Commission; to accomplish bills of lading; to certify invoices for payment as to quantity and quality of supplies shown on such invoices; and in general to perform such duties as properly belong to the position of Depot Quartermaster.

Respectfully,
C. A. DEVOL, *Chief Quartermaster.*

Private Work in Quartermaster's Shops.

CULEBRA, C. Z., October 8, 1910.

ALL DISTRICT QUARTERMASTERS:

Private work, or work for outside parties, will not be permitted in the shops of the Quartermaster's Department, without an order from this office in each case.

C. A. DEVOL, *Chief Quartermaster.*

Culebra Telephone Exchange.

COLON, R. P., October 10, 1910.

Effective this date, the telephone exchange at Culebra is abolished, and all Culebra telephones are connected to the Empire telephone exchange. This will result in changes in number in case of the telephones located in Paraiso and Pedro Miguel, which were heretofore connected to the Culebra exchange. In calling these telephones, parties will please make the call by name.

A private branch exchange has been installed in the office of the Chairman and Chief Engineer. In calling any of these 'phones, parties will ask the Empire operator for the Chief Engineer's office, and connection will be made by the private branch operator to any 'phone desired in the Chief Engineer's office.

A. B. KRATZ,
Superintendent Telephone and Telegraph.

The following vessels arrived at and departed from the port of Balboa during the week ending October 8:

Arrivals—October 3, *Peru*, from San Francisco; October 4, *Chile* from south ports; October 5, *Manavi*, from intermediate ports.

Departures—October 5, *Newport*, to San Francisco *Arica*, to Guayquil; *Aysen*, to south ports.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

The present standing of the men in the chess tournament is as follows:

	Won.	Lost.
Bartlett	3	6
Dubois	9	2
Goodenow	5	6
Mengel	2	7
Putnam	3	8
Stiles	3	3
Warner	8	1

The Gorgona basketball team lost to Culebra on Saturday night, October 8, the score being 34 to 13 in favor of Culebra. The lineup of the teams was as follows: Gorgona—Clements, Stripling, Simka, Forster, Calvit, Hodgson. Culebra—Cushing, Purchase, Vifquain, Steen, Koperski and Case.

The discussion club met on Wednesday evening, October 5, with Mr. R. G. Goodman as leader. His subject was "What Is Happiness?"

On Saturday evening, October 15, Cristobal's first team bowls at Culebra, and Culebra's second team goes to Cristobal.

The local bowling tournament will close this week. Any one who has not rolled all the games should do so at once.

The 200, or over, scores during the week ending October 8 were made by Hall, with 205 and 203.

Another informal "social" is planned for Thursday evening, October 20. A cordial invitation is extended to all.

GORGONA.

The meeting of the discussion club held on Tuesday evening, October 4, was led by Mr. A. B. Dickson of Empire, his subject being "Responsibility." Mr. J. D. Safford of Camp Elliott will take charge of the meeting to be held on Tuesday evening, October 18. His subject will be "Leadership." All men are invited.

The moving picture entertainment on Tuesday evening, October 4, was one of the best yet given. The next entertainment of this kind will be given on Saturday night, October 15.

The present standing of the men in the billiard tournament is as follows:

	Played.	Won.	Lost.
Heltemes	3	3	0
Evans	5	4	1
Orr	3	2	1
Ashman	3	2	1
Clapp	2	0	2
Clark	2	1	1
Chambers	1	0	1
Ryan	1	0	1
Robitoy	1	0	1
Hopkins	2	0	2

A "nighthawk" bowling tournament was started last week. Following are the names of the men entered, with their handicaps: McConaughey, scratch; Hopkins, scratch; Watkins, 11 pins; Strock, 12 pins; Hoover, 15 pins; Calvit, 15 pins; Sennernger, 19 pins; Williams, 19 pins; Whitehead, 22 pins; Junker, 22 pins.

Gatun's first team took three games from Gorgona's first team on Saturday night, October 8, by the following scores:

Gatun.				Gorgona.			
Barte	200	170	155	Roper	161	188	115
Severn	131	163	135	Gaedkie	180	143	147
DeMoll	143	169	158	White	165	172	150
Wolf	177	160	184	Stewart	124	129	174
Ponton	147	164	161	Otis	138	184	178
Total	798	826	793	Total	768	816	764

The 200, or over, scores for the week ending October 8, were made by the following men: Misal, 201; Frances, 209; Stewart, 221; Roper, 231; Hopkins, 230.

Basketball practice is scheduled for Monday and Thursday nights at 8 o'clock. All men are asked to come and take part in the game. Every one that comes will have an opportunity to play.

GATUN.

The moving picture entertainment given on Thursday evening, October 6, was enjoyed by a good-sized audience. The next entertainment of the kind will be given on Thursday night, October 13. The price of admission is as follows: Members free; nonmembers, 25 cents; children, 15 cents.

Gatun's second team won three games from Gorgona's second team on Saturday evening, October 8, by the following scores:

Gorgona.				Gatun.			
Stoehr	166	106	126	Dalton	140	111	169
Frances	168	129	165	Herrington	178	172	168
Bordt	141	168	154	Myers	161	163	141
Varenkamp	167	150	113	Wilson	155	143	200
Haldeman	112	165	140	Hodges	168	159	166
Total	754	718	698	Total	802	748	844

Mr. DePoorter of Gatun and Mr. Wilson of Porto Bello will be matched in a game of pool in the near future to decide the championship of the Isthmus.

Following are the men entered for the three cushion billiard tournament, and their handicaps: Grant, Porter, Hughes, scratch; Tonsley, Kemper, Durand, 3 points each.

The contestants in the October pool tournament, with their handicaps, are as follows: Prados, 15 balls; McLain, 5 balls; Meyers, 10 balls; Miller, 5 balls; Eggleston, scratch; Ourand, 10 balls; Durand, 5 balls.

Empire's first team bowls at Gatun on Saturday night, October 15.

The discussion club will meet on Friday night, October 14, the subject being "What Is Failure?"

The "social smoker" for October has been postponed until the 20th of the month. Some excellent talent is being secured and a good program is assured.

The basketball game on Saturday night, October 8, between the Gatun and Cristobal teams, was won by the Gatun team, the score being 23 to 20.

CRISTOBAL.

The regular meeting of the discussion club held on Thursday evening, October 6, was turned over to Mr. E. T. Colton, one of the secretaries of the international committee of the Young Men's Christian Association. He gave a very interesting talk of his trip through South America, making special reference to the student life in that land. On Thursday night of this week, Mr. Dickson of Empire will lead the discussion, his subject being "Responsibility."

The first and second teams rolled a match game on Thursday night, October 6, with the following results:

First Team.				Second Team.			
Bullard	138	203	167	Barrett	176	142	171
Rabbitt	180	182	155	Weston	169	160	167
Collins	164	169	125	DeCora	167	101	168
Burns, T.	122	159	157	Adams, H.	170	185	128
Thomas	154	181	149	Blackburn	185	123	160
Total	758	894	753	Total	867	711	794

Empire's first team took three games from Cristobal's first team on Saturday night, October 8. Following are the scores:

Empire.				Cristobal.			
Gorham	169	136	161	Bullard	177	183	146
Potter	168	179	179	Rabbitt	175	138	185
Shaughnessy	204	144	161	Collins	162	181	164
Pearson	148	189	168	Burns, T.	142	132	134
Huson	209	165	174	Thomas	139	153	159
Total	898	813	843	Total	795	787	788

The Y. M. C. A. "Picks" defeated the U. S. S. *Tacoma* basketball team on Saturday night, October 8, by a score of 38 to 4. The lineup of the two teams was as follows: Tacoma—Ford, Stohlman, Goertz, Huber, Desenfants. Cristobal—Simms, Goodman, Hunter, Duer, Herrington, and Schwallenberg.

A "smoker" will be heldon Friday night, October 14. An attractive program has been planned, and all men of Cristobal are cordially invited to be present, whether members of the Y. M. C. A., or not.

A dramatic club is being organized with a view to presenting a play in the near future.

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal and Colon during the week ending October 8, 1910:

Cristobal, October 1, from New York, with 28,000 barrels cement for Atlantic Division; 90,800 bags cement for Pacific Division.

Prinz Aug. Wilhelm, October 3, from New York with 2,000 cases mineral oil, 92 pieces jacks and vises, 12 cases sledges and vises, 130 bundles turnbuckles, 114 barrels ammonia alum for stock.

Keyingham, October 4, from Philadephia, with 551 pieces piling, 10,360 pieces yellow pine lumber for Atlantic Division; 439 pieces white oak, 551 pieces steel, plates, 210 pieces steel bars, 1,140 pieces steel angles for Mechanical Division; 76 pieces piling, 11,282 cross-ties, 1,060 pieces yellow pine lumber, 3,167 pieces steel, rails, 8,449 bundles splice bars, 3,864 pieces steel pipe 562 pieces steel plates, 450 pieces steel angles, 1,273 pieces black pipe for stock.

Panama, October 5, from New York, with 50 pieces switches, 80 crates handles, 31 bales leather belting 637 bundles shovels, 33 kegs coach screws, 75 cases water coolers, 18 cases tackle blocks, 34 barrels rosin, 88 cases caustic soda, 100 cases sapolio, 73 crates ranges, 28 bundles pad boards for stock; 371 pieces steel bars, 235 pieces castings for Mechanical Division; 10 packages electrical material for Pacific Division; 50 packages drugs for Sanitary Department; and a miscellaneous cargo, the whole consisting of 2,103 packages, weighing 244 tons.

Turrialba, October 6, from New Orleans, with 4,793 bales hay, 529 bales straw, 10 cases yellow ochre, 680 pieces yellow pine for stock; 3,195 pieces yellow pine for Atlantic Division; 445 pieces yellow pine for Mechanical Division; 452 tons dump car parts for Cristobal shops (for erection).

Santa Marta, October 7, from New York, with 20 packages castings for Atlantic Division.

Aldershot, October 7, from Gulfport, with 631 pieces piling for Atlantic Division; 159 pieces piling, 3,718 cross-ties for stock.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company, of the Royal Mail Steam Packet Company, of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Colon	P. R. R.	Tuesday	Oct. 11
Advance	P. R. R.	Monday	Oct. 17
Panama	P. R. R.	Saturday	Oct. 22
Allianca	P. R. R.	Friday	Oct. 28
Colon	P. R. R.	Friday	Nov. 4
Advance	P. R. R.	Thursday	Nov. 10
Panama	P. R. R.	Wednesday	Nov. 16
Allianca	P. R. R.	Tuesday	Nov. 22
Colon	P. R. R.	Monday	Nov. 28

CRISTOBAL TO NEW YORK.

Allianca	P. R. R.	Monday	Oct. 17
Colon	P. R. R.	Sunday	Oct. 23
Advance	P. R. R.	Saturday	Oct. 29
Panama	P. R. R.	Friday	Nov. 4
Allianca	P. R. R	Thursday	Nov. 10
Colon	P. R. R.	Wednesday	Nov. 16
Advance	P. R. R.	Tuesday	Nov. 22
Panama	P. R. R.	Monday	Nov. 28
Allianca	P. R. R.	Sunday	Dec. 4
Colon	P. R. R.	Saturday	Dec. 10

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 4th and 25th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Metapan	U. F. C.	Thursday	Oct. 6
Prinz Joachim	H.-A.	Saturday	Oct. 8
Zacapa	U. F. C.	Thursday	Oct. 13
Tagus	R.-M	Saturday	Oct. 15
Almirante	U. F C.	Thursday	Oct. 20
Prinz Aug. Wilhelm	H.-A.	Saturday	Oct. 22
Santa Marta	U. F. C.	Thursday	Oct. 27
Oruba	R.-M	Saturday	Oct. 29
Metapan	U. F. C.	Thursday	Nov. 3
Prinz Joachim	H.-A.	Saturday	Nov. 5
Zacapa	U. F. C.	Thursday	Nov. 10
Magdalena	R.-M	Saturday	Nov. 12
Almirante	U. F. C.	Thursday	Nov. 17
Prinz Aug. Wilhelm	H.-A.	Saturday	Nov. 19
Santa Marta	U. F. C.	Thursday	Nov. 24
Clyde	R.-M.	Saturday	Nov. 26

COLON TO NEW YORK.

Santa Marta	U. F. C.	Friday	Oct. 14
Oruba	R.-M	Monday	Oct. 17
Metapan	U. F. C.	Friday	Oct. 21
Prinz Joachim	H.-A.	Tuesday	Oct. 25
Zacapa	U. F. C.	Friday	Oct. 28
Magdalena	R.-M.	Monday	Oct. 31
Almirante	U. F. C.	Friday	Nov. 4
Prinz Aug. Wilhelm	H.-A	Tuesday	Nov. 8
Santa Marta	U. F. C.	Friday	Nov. 11
Clyde	R.-M.	Monday	Nov. 14
Metapan	U. F. C.	Friday	Nov. 18
Prinz Joachim	H.-A.	Tuesday	Nov. 22
Zacapa	U. F. C.	Friday	Nov. 25

NEW ORLEANS TO COLON.

Abangarez	U. F. C.	Saturday	Oct. 8
Atenas	U. F. C.	Saturday	Oct. 15
Turrialba	U. F. C.	Saturday	Oct. 22
Abangarez	U. F. C.	Saturday	Oct. 29
Atenas	U. F. C.	Saturday	Nov. 5
Turrialba	U. F. C.	Saturday	Nov. 12

COLON TO NEW ORLEANS.

Turrialba	U. F. C.	Thursday	Oct. 13
Abangarez	U. F. C.	Thursday	Oct. 20
Atenas	U. F. C.	Thursday	Oct. 27
Turrialba	U. F. C.	Thursday	Nov. 3
Abangarez	U. F. C.	Thursday	Nov. 10
Atenas	U. F. C.	Thursday	Nov. 17

COLON TO BARBADOS, CALLING AT TRINIDAD.

Tagus	R.-M	Tuesday	Oct. 25
Oruba	R.-M	Tuesday	Nov. 8

The next sailing of the Leyland Line will be as follows: *Jamaican* on or about October 14, for New Orleans, via Kingston, Ja.

Hamburg-American steamers leave for New York at 10 a. m., and for Port Limon every Tuesday or Wednesday.

Royal Mail steamers leave for New York on alternate Mondays at 5 p. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans leave on Thursday at 3 p. m., and for New York on Friday at 10 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3rd and 20th of each month.

CANAL RECORD

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No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Acting Chairman's Monthly Report.

The report of the Acting Chairman of the Isthmian Canal Commission for the month of September is published in full in other columns of this issue of THE CANAL RECORD. It gives a detailed account of the progress of Canal work in all departments and divisions.

Shop Order System at Gorgona.

A new work order system will be installed in Gorgona shops to relieve the foremen of much of the clerical work they are now obliged to do, and thus give them more time for planning the methods of shop work and supervising the men under them. The great increase in work at the shops, without corresponding increase in supervisory force, makes it advisable to relieve the foremen of clerical duties. Two draftsmen will be required for the new system and, in addition to their clerical duties, they will be available to explain to the various foremen the details of drawings, thus accomplishing a further saving in the time of the supervisory force. The foremen who will be benefited especially are those of the machine shop, boiler, blacksmith, carpenter, planing, and pattern shops, and the night foremen.

The new system will be installed gradually, and for the present will be confined to manufacturing orders only. A material bill will be made out in the drafting room and will accompany each shop order when it is issued to the shop. It will show in distinct columns the nature of the article ordered, the quantity required, the stock on hand, or if not on hand, the date at which a definite quantity may be expected, and the shop by which stock is to be drawn from the storehouse. In this connection the storekeeper of the Quartermaster's store at Gorgona has been instructed to follow certain rules in order that there may be thorough cooperation.

The effect of the system will be to relieve the foremen of work in studying out the details of drawings, preparation of a list of materials needed for each job, and ascertaining whether the material is in stock or on the Isthmus. It is estimated that one-fourth of the time of the foremen can be saved in this way.

A progress report system will also be installed by means of which a card catalogue record of the advance of work will be kept. This record will be added to each day and it will be possible therefore to tell in just what state an order is by merely referring to the catalogue.

President Taft's Visit.

It is officially announced from Beverly, Mass., that President Taft will sail for the Isthmus on November 10 from Charleston, S. C., on board the armored cruiser *North Carolina*, and under the convoy of the sister ship *Montana*. It is expected that he will arrive on the Isthmus on November 14, and remain here four days.

Unloader Performances in Chagres District.

During the month of September, there were four unloaders at work in the Chagres district of the Central Division, two of which were working on the Tabernilla dumps and two on the dumps on the relocation of the Panama railroad between Gamboa and Caimito. The unloaders on the Tabernilla dumps unloaded an average of 20 trains per day, and those on the relocation dumps, 24 trains per day. The unloaders at Tabernilla were delayed 31 hours and 12 minutes waiting for trains, while those on the Panama railroad relocation were delayed 38½ hours for the same cause. In addition to this delay, there were numerous other delays on account of derailments, changing unloader, changing plow, and repairs. From September 1 to 15, the Lidgerwood trains averaged 19 cars to the train, after which date an additional car was added, giving an average of 20 cars per train.

Sanitary Work in Panama Suburbs.

The work of removing the unsanitary houses and shacks in the newly improved districts of Guachapali and Santa Cruz, including also the districts known as Marañon and San Miguel, which was begun on June 21, 1909, in accordance with the Health Office order of that date, is practically completed. One hundred and fifty-two buildings were ordered destroyed in Guachapali and 57 in Santa Cruz, and most of them were demolished by the Health Office forces. The district of Santa Cruz, with San Miguel, comprises about all of the settled portion of the city lying between the Panama railroad, the Caledonia road and the Zone boundary line. As a result of the recent street improvements and the installation of water mains and sewers in this section, there has been an impetus in building operations, and up to October 15, a total of 63 permits had been issued, as compared with one permit on September 30, 1909. These permits mostly cover two-story frame buildings, the floor joists of which, in accordance with existing sanitary regulations, must be set in concrete to prevent the entrance of germ-carrying vermin. Building operations in Guachapali continue, but on a smaller scale than a few months ago. The permits issued in that district to October 15 number 148, as compared with 35 on September 30, 1909. The street improvements made in these districts by the municipal engineering forces of the Pacific Division are about concluded, and most of the men have been laid off.

Hotel Improvements.

The dining room of the Washington Hotel at Colon has recently been renovated and repainted. A hat rack has been placed near the entrance for the convenience of guests, a linen room has been added, and some improvements made in the kitchen arrangements. The grounds in front of the hotel have been newly seeded, and additional plants have been set out. The driveway along the beach in front has been remetaled and rolled. An inquiry was received a few days ago from Delft, Holland, regarding accommodations for a party of four that desire to spend the months of February and March on the Isthmus inspecting the Canal.

The location of the stairway leading to the upper floor of the Cristobal Hotel has been changed to the front of the building, and the space enclosed, so that employes who have quarters in the hotel can gain access to them, without having first to enter the section of the lower veranda reserved for dining purposes.

Growth in Isthmian Shipping Trade.

The total number of vessels arriving at the ports of Colon, Cristobal and Balboa during the first six months of 1910 shows a considerable gain over the last half of 1909. At Colon and Cristobal, the increased growth amounted to over 20 per cent, and at Balboa the gain was over ten per cent. The vessels arriving at Colon and Cristobal from January to June 30, 1910, inclusive, numbered 455, as compared with 384 for the period from July 1 to December 31, 1909, inclusive. The vessels at Balboa for the same periods were 127 and 115, respectively.

The record for July, August and September of this year at Colon and Cristobal indicates a continued growth at these ports, the total of arrivals for August being 88, a larger number than has been recorded in any previous month for over a year. During the week ending October 1st, 24 vessels entered the ports. While this number has been equalled in one or two previous weeks of record, it has never been exceeded. The average number of vessels arriving each week of late has been 19 The greater part of them make Colon and Cristobal regular ports of call, and some of the colliers employed by the Earn Line to bring coal to the Isthmus have been on the same run for the past two or three years. The sailings of the new steamship service from California,

NOTES OF PROGRESS.

(Continued.)

which were begun this month, adds four more vessels to the list of those plying regularly to the ports of the Pacific and Atlantic entrances to the Canal.

The boat arrivals at Colon also include a number of sloops and schooners, which make trips between the Isthmus and Trinidad, Jamaica, and other islands of the West Indies, while a few come from Central American coast points and islands nearby. The number of boats engaged in this trade has increased considerably in the past two years. One of this class, the *Gertrude*, arrived recently from Turtle Bow on the Costa Rican coast, a locality which gets it name from the large number of turtles found there. The sloop makes occasional trips to Colon, bringing as its principal cargo, several hundred turtles reaching in size to 500 pounds, which find ready sale in the local market. Several vessels make periodic trips from the island of San Andres with fruit, and schooners from the West Indies bring yams, yucca, avocados and fruits, and also, as a rule, a few passengers.

Concrete in Gatun Locks.

The concrete work in Gatun Locks is about 38 per cent completed, 802,306 cubic yards, out of a total of 2,095,000, having been placed at the close of work on October 15. Most of the concrete being placed is put in the floor and walls of the middle locks. The record of concrete placed each day last week, and of the total up to and including October 15, is shown in the following statement:

DATE.	Concrete placed.	Large stone.	Hours worked.	No. of mixers	Total.
	Cu. Yds.	*Cu. Yds.*			*Cu. Yds.*
Oct. 10.	2,824	274¾	90:39	8	3,098¾
Oct. 11.	3,212	307¾	92:06	8	3,519¾
Oct. 12.	3,195	274¾	94:12	8	3,469¾
Oct. 13.	3,417	453¼	89:04	8	3,870¼
Oct. 14.	3,166	368¾	90:04	8	3,534¾
Oct. 15.	3,300	411½	91:27	8	3,711½
Total...	19,114	2,090¾	....	......	21,204¾
Previously reported	....	....	....	......	781,100½
Grand total..	....	....	....	......	802,305¼

Miraflores Locks.

The record of concrete laid in the Miraflores Locks during the six 8-hour working days of the week ending October 15, and of the total to that date, follows:

DATE.	AUXILIARY PLANT.			
	2-Cubic yard mixers.	½-Cubic yard mixers.	Large stone.	Total.
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*
October 10....	550	365	15	930
October 11....	256	422	15	693
October 12....	84	407	8	499
October 13....	328	416	34	778
October 14....	332	431	20	783
October 15....	368	427	15	810
Total.......	1,918	2,468	107	4,493
Previously reported....	....	....	813	35,391
Grand total.	....	....	920	39,884

Vacations in Guatemala.

Regarding the announcement in THE CANAL RECORD of October 5 of the permission accorded employes to spend their vacations in Guatemala City, the Chief Quarantine Officer advises that a quarantine against ports in Guatemala touched by lines of steamers plying to the Isthmus has existed for several years past and is still in force.

Lock Work at Pedro Miguel.

The work of placing concrete in the extension of the east wall into the forebay at Pedro Miguel Locks is in progress. The west and center walls of the locks have been extended south to the first of the three lower gate sills, and the construction of the east wall is advancing.

The record of concrete laid in the locks during the six 8-hour working days of the week ending October 15, with the total to that date, is as follows:

DATE.	CUBIC YARDS.			
	Construction plant.	Auxiliary plant.	Large stone.	Total.
October 10....	2,038	130	....	2,168
October 11....	1,982	92	....	2,074
October 12....	2,042	206	....	2,248
October 13....	2,038	268	....	2,306
October 14....	2,034	114	....	2,148
October 15....	2,246	166	30	2,442
Total.......	12,380	976	30	13,386
Previously reported....	....	....	3,322	328,061
Grand total.	....	....	3,352	341,447

Gatun Dam and Spillway.

The survey made at the end of September showed that the surface of the hydraulic fill in the western section of Gatun Dam was at 27.3 feet above sea level, an increase in height of 5.3 feet during the month. Three of the four 20-inch suction dredges on the Dam work pumped into the west section all during the month and the fourth also pumped into that section after September 16. No hydraulic fill was added to the east section of the Dam during September, and the survey showed that the surface of the fill was at 56 feet above sea level,a subsidence of 1.3 feet during the month, due to consolidation. The total of the hydraulic fill at the close of the month was 4,979,457 cubic yards.

The progress of concrete laying in the spillway of the Dam during the two weeks ending October 15 is shown in the following statement:

DATE.	Cubic Yards.		
	Concrete	Large rock.	Total.
October 3.	186	....	186
October 4.............	308	....	308
October 5.............	302	10	312
October 6.............	284	4	288
October 7.............	288	10	298
October 8.............	304	20	324
October 10............	282	18	300
October 11............	294	10	304
October 12............	304	8	312
October 13............	292	....	292
October 14............	324	....	324
October 15............	278	10	288
Total...............	3,446	90	3,536
Previously reported....	....	....	95,310
Grand total.........	....	....	98,846

Married.

WALSH–BOWMAN—On October 12, in the Union church, Cristobal, Martin Franklin Walsh of Stockton, Cal., and Jenny Lind Samantha Bowman of Santa Cruz, Cal., Rev. Carl H. Elliott officiating. Canal Zone residence, Cristobal.

EXECUTIVE ORDER.

Collection of Taxes.

By virtue of the authority vested in me, I hereby establish the following Executive Order for the Canal Zone Government:

SECTION 1. The office of the District Tax Collector, created by paragraph two of the Executive Order effective April 15, 1907, is hereby abolished.

SECTION 2. The duties heretofore discharged by the District Tax Collectors shall be performed by the Collector of Revenues in person or by duly appointed deputies, provided that there shall be a Deputy Collector of Revenues assigned to each administrative district, who, under the direction and supervision of the Collector of Revenues shall exercise and perform the duties of the Collector of Revenues within the respective districts. The Collector of Revenues shall have such additional deputies, assistants and other help as are now assigned to him or may hereafter be assigned to him by competent authority.

The existing laws relating to the execution of official bonds by the Collector of Revenues and his deputies shall not be affected in any manner by this Order.

SECTION 3. Taxes and penalties assessed against real estate or the improvements thereon shall constitute a lien on such property which shall be superior to all other liens, mortgages or encumbrances of any kind whatsoever and shall be enforceable against the property whether in the possession of the delinquent or any subsequent owner and can be discharged only by the payment of the taxes, a penalty of twenty (20%) per cent, and any costs that may have accrued.

SECTION 4. A statement showing the persons delinquent for taxes in the respective districts prepared and signed by the Collector of Revenues and approved by the Head of the Department of Civil Administration and containing the requisites prescribed by Section 54 of Act 7 of the Laws of the Canal Zone enacted September 1, 1904, shall be sufficient warrant for the proceedings to seize and sell property sufficient to satisfy the amount of taxes, penalties and costs due in each case, and the monies acquired by the Collector of Revenues at such sale shall be duly accounted for by him to the Treasurer of the Canal Zone, in like manner as other public monies received by him; and in making returns thereof he shall show the total amount of proceeds received from such sale, the amount of taxes, penalties and costs and any surplus remaining that may have been paid over to the delinquent tax payer for the payment of such surplus.

SECTION 5. The owner of personal property seized may redeem the same from the Collector of Revenues at any time before the sale, but not afterwards, by tendering to him or his deputy the amount of the taxes, penalties and costs up to the time of the tender; the costs to be charged in making such seizure and sale shall only embrace the actual expense of the seizure and preservation of the property pending the sale, and no charge shall be imposed for the services of the collecting officer.

The purchaser at a tax sale of personal property shall acquire an indefeasible title to the property sold, and the officer making the sale shall execute a bill of sale of such property to the purchaser.

SECTION 6. The provision of said Act 7 of the Canal Zone Laws, relating to the forfeiture of real estate and other immovable property to the municipalities, formerly existing, in default of bidders at tax sales, and the procedure therein established in such cases, and the conditions therein prescribed in respect to the redemption of such property by the delinquent tax payers, and the execution of deeds to the municipalities thereunder when the property was not duly redeemed shall apply hereafter to the Canal Zone Government, and the property shall pass to the Canal Zone Government in default of bidders at such tax sales, in like manner and form as it did to the abolished municipalities under the said Act 7.

SECTION 7. Deeds conveying title to real estate or to improvements thereon executed by the Collector of Revenues or his deputies to private persons or to the Canal Zone Government under tax sales pursuant to law, shall convey all right, title, and interest of the delinquent tax payer in and to the property sold, on the date of such sale, and shall be entitled to registration in the real estate records of the district in which the property is situated.

SECTION 8. All the provisions of said Act 7 of the Canal Zone Laws relating to the levy, assessment and payment of taxes and the enforced collection thereof which conferred powers and imposed duties on the officials of the abolished municipalities shall be held to apply to the Collector of Revenues, and hereafter, he shall exercise and discharge all said powers and duties in person or through his deputies in the respective administrative districts.

SECTION 9. All laws, orders or decrees in conflict with this Order are hereby repealed, but the repeal shall not affect any action or procedure that may have been taken or had under preexisting laws and such action or procedure if not terminated shall be proceeded with in conformity with this Order as near as may be: and, provided further, property now delinquent for taxes may be sold to satisfy the taxes due thereon under the provisions hereof in like manner as may be done with property becoming delinquent hereafter.

SECTION 10. Nothing in this Executive Order shall be held to deprive the Chairman and Chief Engineer or the Head of the Department of Civil Administration from exercising any power or authority now conferred on them, or either of them, by law in relation to the appointment of officers and employes, or the supervision of the work of officers and employes responsible or reporting to them, or to either of them. WM. H. TAFT.

THE WHITE HOUSE,
October 4, 1910.

[No. 1250.]

Obituary.

W. S. Halstead of Columbus, Ga., died at Ancon Hospital on October 12, after an illness of about twenty days. He was 29 years of age, single, and had been on the Isthmus four years. He was an employe of the Chairman's office at Culebra.

John A. Schaberle, who was the victim of a shooting affair at Culebra on the morning of October 10, died at Ancon Hospital on October 12. He was 33 years of age, single, and had been on the Isthmus two years, living at Culebra, where he was employed in the office of the Chief Engineer. His home address was Detroit, Mich.

A fire in the kitchen of the Bas Obispo hotel on Sunday, October 16, caused about $300 worth of damage.

FEDERATED WOMEN'S CLUBS.

Fall Meeting of the Zone Organization Held at Gorgona.

The fall meeting of the Canal Zone Federation of Women's Clubs was held in Gorgona on Thursday, October 13. Each of the six federated clubs was represented by four delegates and there were present the honorary president, Mrs. Lorin C. Collins, the three vice-presidents and other officers of the Federation, and a large number of club women. Following the Federation lunch, which was taken at the Commission hotel, the business meeting convened at the Gorgona clubhouse at 1.30, the president, Mrs. Thomas E. Brown, Jr., presiding.

It had been requested that the reports of the club presidents should outline the proposed plan of work of the clubs for the year, but owing to lateness in resuming meetings, illness, and other causes, only the presidents of the Cristobal, Gatun, and Paraiso clubs were able to announce any formal plan. In these reports, and those of the chairmen of Federation committees which followed, there was evidenced a tendency toward intellectual development through systematic and harmonious programs, and a broadening of educational effort along philanthropic lines.

The chairman of the health committee recommended a campaign against the spread of tuberculosis among natives in the poorer districts. Already some work has been begun unofficially by Mrs. Collins of the Cristobal club, and with organized effort and the cooperation of the authorities a vigorous campaign will be prosecuted. It was suggested also, that something could be done educationally by lectures, and possibly by a tuberculosis exhibit among the clubs in the Canal Zone. In order to concentrate effort the committee on philanthropy and civics has issued a list of suggestions which include medical inspection in the public schools of Panama and Colon; the establishing of playgrounds; the care of infants, it having been ascertained that a high rate of mortality obtains among children under two years; establishing free dispensaries under reputable physicians in Panama and Colon to counteract the use of patent medicines; publishing items on tuberculosis in the daily papers; distributing reading matter on preventive measures; having addresses made by physicians; and working for the establishment of free kindergartens for colored children.

Letters were read from the president of the General Federation of Women's Clubs asking the cooperation of the Canal Zone Federation in the effort to increase the treasury of the General Federation, recommending that each club become a subscriber to the official organ, "The General Federation Bulletin," and expressing appreciation of the efforts of the club women in the Canal Zone.

Resolutions were adopted on the abolition of the common drinking cup in the Canal Zone; recommending that the bread baked in the Panama railroad bakery at Cristobal be wrapped before it leaves the bakery; recommending that the home committee arrange for a course of lectures in domestic science; and requesting that clothing be contributed to the line and terminal hospitals to be given to patients when discharged. This last has been one of the philanthropic efforts of the Gatun club, and it has been greatly appreciated.

At 3.30 a ten minute recess was taken, after which the meeting reconvened in the entertainment hall of the clubhouse which was decorated with flags and flowers. Papers by the chairmen of committees included one on art by Mrs. Henry Ropes Trask; education by Mrs. Elliott; household economics by Mrs. W. H. Ellenwood, and conservation of natural resources by Mrs. F. W. Walraven. In each of these papers, suggestions were made as to the best use the clubs might make in their programs of the subject presented.

The guests of honor were Mrs. Maurice H. Thatcher, Mrs. Wesley Owen, and Mrs. H. R. Moon. At the request of the president, the honorary president and Mrs. Thatcher made informal addresses.

A musical program was rendered as follows: Piano solo, Mrs. Moon; song, Miss Ethel Otis, Miss E. Decker, accompanist; "Barcarolle," violin duet, Mrs. Wm. H. Decker and Miss Jessie Smith, Mrs. Alfred Dickson, accompanist; songs "The Spring Has Come," and "Don't You Mind the Sorrows," Mrs. Owen, Mrs. Moon, accompanist; duet for piano, "Sketches", Ethelbert Nevin, Mrs. Thatcher and Mrs. Moon. The afternoon closed with an informal reception, refreshments being served by the Gorgona club.

In order to assist the various clubs in their programs for the year, the following circular letter has been issued by the reciprocity committee:

> This committee will receive requests from clubs for outlines of programs, papers on any special subject, or for speakers for special occasions. It is desired that any club making such request should state definitely the subject required and give alternative dates, if possible, as all requests are referred to the chairmen of the Federation committees.
>
> The chairmen of the committees are asked to keep on file a list of such papers as they may be able to furnish, of such speakers as they may be able to call upon for lectures, and also, to keep a file of clippings on interesting subjects.
>
> Clubs are expected to carry all expenses connected with the work of this committee, including the transportation and entertainment of speakers, or others, who come at the request of the club.

PERSONAL.

Mr. H. H. Rousseau, with Mrs. Rousseau, returned from his annual leave in the States on the *Ancon*, which arrived at Cristobal on October 20.

Mr. S. B. Williamson returned from his annual leave on the *Ancon* on October 20.

Mr. Tom M. Cooke, accompanied by Mrs. Cooke, returned from his leave in the States on the *Metapan*, which arrived at Colon on October 14.

Mr. A. L. Robinson sailed for the States on his annual leave on the *Allianca*, which left Cristobal on October 17.

Mr. A. B. Nichols returned from his annual leave in the States on the *Colon*, which arrived at Cristobal on October 17.

Missing Man.

Any one having information regarding the whereabouts of W. Davis Porter, who is supposed to have worked in the Canal Zone, is requested to communicate with the Director of Posts, Ancon, C. Z.

Johnson Charged with Manslaughter.

J. R. Johnson was arraigned before Justice Owen in the Circuit Court at Empire on October 18 and a formal charge of manslaughter was preferred against him for having caused the death of J. A. Schaberle at Culebra on the morning of October 10. The date of trial was fixed at October 25. Under the Canal Zone laws a person accused of manslaughter may not be granted a jury trial.

Bail was fixed at $2,500.

CANAL WORK IN SEPTEMBER.

Monthly Report of the Acting Chairman to the Secretary of War.

CULEBRA, C. Z., October 15, 1910.

The Honorable the Secretary of War,
Washington, D. C.

Sir: I have the honor to submit the following report of operations on the Isthmus for the month of September, 1910:

Department of Construction and Engineering.

The following table summarizes the principal items of construction work accomplished by the Atlantic, Central and Pacific Divisions during the month:

Item.	Unit.	Atlantic.	Central.	Pacific.	Total.
Work excavation, dry	Cubic yards	103,040	1,574,238	18,995	1,696,273
Work excavation, wet	Cubic yards	451,873	....	473,585	925,458
Total work excavation	Cubic yards	554,913	1,574,238	492,580	2,621,731
Plant excavation, dry	Cubic yards	21,713	....	....	21,713
Plant excavation, wet	Cubic yards	26,444	....	17,200	43,644
Total plant excavation	Cubic yards	48,157	....	17,200	65,357
Total Canal excavation	Cubic yards	603,070	1,574,238	509,780	2,687,088
Material placed in dams	Cubic yards	686,275	....	11,220	697,495
Concrete laid	Cubic yards	81,628	....	68,835	150,463
Explosives used	Tons (Gross)	83.78	199.05	21.00	303.83
Rock drilling	Feet	78,644	351,791	28,367	458,802
Track removed	Miles	....	7.90	....	7.90
New tracks laid	Miles	2.98	12.36	1.04	16.38
Rock crushed	Cubic yards	69,733	56	58,244	128,033
Cement used	Barrels	84,997	29	70,806	155,832
New roads built	Miles	0.37	....	....	0.37
Water mains laid	Feet	9,405	1,891	1,166	12,462
Sewers laid	Feet	1,711	292	783	2,786
New drains and ditches dug	Feet	2,348	....	4,981	7,329
Average daily force		8,698	9,197	4,024	21,919
Average rainfall	Inches	12.38	13.34	5.90	12.03

Atlantic Division.

GATUN LOCKS.

Excavation—Shovel excavation during the month was confined to the lower chamber. A total of 95,561 cubic yards of material was removed, including 17,683 cubic yards of clay excavated outside the limits of the Canal prism for the impervious back-fill south of the intermediate gate. The total amount removed to date aggregates 5,308,457 cubic yards. The excavation, including excavation for the approach walls, is 91 per cent completed. The culvert excavation in the middle chamber is 92 per cent completed.

Receiving and Issuing Material—The receipts of material during the month were satisfactory, and exceeded the consumption on all items.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS.

	Permanent Plant.	Auxiliary Plant.
Average hours per day worked per strand of cableway laying concrete and large stone	7.40	......
Average number of mixers per day	6.00	2.00
Average hourly output per mixer, cu. yds	25.92	74.60
Average amount of concrete and large stone laid per hour, per strand of cableway, cu. yds.	31.77	....
Total number cu. yds. of large rock laid by the cableways	4,850	....
Total number cu. yds. of concrete laid by the cableways	43,861	....
Total number of cu. yds. of concrete from this plant laid by derrick.	596	....
Average amount of concrete, per hour, laid by the derrick, cu. yds.	19.22	
Total number of cu. yds. of large rock placed	....	2,909
Total number of cu. yds. of concrete placed	....	24,991
Total amount large rock and concrete handled, cu. yds.	49,307	27,900

Concrete Work—The concrete work for the 25 working days in September shows a decrease of 8,965.5 cubic yards, as compared with the amount laid during the 27 working days in the month of August. The bucket measurement exceeded the place measurement by 309.5 cubic yards. The total amount of concrete and large stone placed during the month was 49,785 cubic yards in the upper lock, and 27,462.5 cubic yards in the middle lock, or a total of 77,207.5 cubic yards. The total amount placed to October 1, was 759,972 cubic yards, of which 702,371.5 cubic yards have been placed in the upper lock, and 57,600.5 cubic yards in the middle lock. The concrete work is 37.1 per cent completed.

Receipt of Crushed Rock and Sand—During the month 115 barges of crushed rock were brought from Porto Bello, and 33,382 cubic yards of sand, in 66 barges, were received from Nombre de Dios.

Power Plant and Pumps—The operation of the power plant and pumps during the month was satisfactory.

Iron and Steel Work—The setting of steel at the intermediate gate, and at the lower gates of the upper lock, was continued. Four anchors for safety chains above the intermediate gate were also placed.

Back-Fill—A total of 26,410 cubic yards of back-filling was placed, making 48,786 cubic yards to October 1. The back-fill is 4.06 per cent completed.

Form Work—The wooden form work during the month has been slow and expensive, on account of the large amount of interior wooden forming. Two more steel towers were transferred during the month from the upper to the middle chamber.

GATUN DAM.

Construction during the month increased the total fill by 686,275 cubic yards, making a total in place of 9,855,015 cubic yards.

Hydraulic Fill—The dredges increased the hydraulic fill by 457,637 cubic yards. The total hydraulic fill to date is 4,979,457 cubic yards.

Dry-Fill—The material received from the Central Division, the Locks, the Spillway and the plant excavation, amounted to 228 638 cubic yards and was placed on the north and south toes of the Dam, making the total dry-fill in place 4,875,558 cubic yards.

GATUN SPILLWAY.

Concrete—The construction of the east and west approach walls was continued, 4,421 cubic yards being placed. The total concrete in place is 94,605 cubic yards.

Excavation—In excavating for the forebay and for the foundation for the approach walls 25,162 cubic yards of material were removed, making a total Spillway excavation of 1,483,125 cubic yards.

Cut-off Levee—Material amounting to 13,249 cubic yards was placed in the levee from Spillway Hill to Mindi Hill, making a total of 176,461 cubic yards.

HARBOR AND CHANNEL SECTION.

Dredging from the Ocean to Mindi—Six dredges removed 420,869 cubic yards of earth and 31,004 cubic yards of rock from the Canal prism. In addition, the *Chagres* removed 5,654 cubic yards of earth at the coal dock, 2,590 cubic yards of rock in the French canal at Mindi, and 13,650 cubic yards of earth and 4,550 cubic yards of rock at the Gatun docks. On September 30th, 40 feet of water could be carried from zero to zero plus 4,700 feet; 30 feet to mile 5 plus 800 feet; 20 feet to mile 5 plus 2,550 feet, the junction with the French canal.

PORTO BELLO.

PERFORMANCE OF ROCK CRUSHER PLANT.

	Hours.
Length of working day, from September 1 to 17	16.00
Length of working day, from September 19 to 30, 6 a. m., to 6 p m.	12.00
Average number of hours worked per day	9.30
	Cu. Yds.
Average amount per hour of working day	196
Average hourly output for possible working time of 344 hours	203
Average amount per working hour	300
Total for month	69,733
Maximum day's output for 12 hours	3,508
Maximum day's output for 16 hours	3,749

SAND STONE AND CEMENT SERVICE.

In connection with this service, plant steamed 10,398 miles, handled 717 barges, and carried about 2,688 passengers.

COLON BREAKWATER.

The material excavated amounted to 12,852 cubic yards, of which 6,862 cubic yards were placed in the breakwater and 5,990 cubic yards used for ballasting track. Five hundred and forty linear feet of double track trestle were built.

NOMBRE DE DIOS.

Dredges and cranes excavated 33,013 cubic yards of sand.

MUNICIPAL ENGINEERING.

A water supply and sewer system for the camp at Toro Point were under construction during the month, and the usual work of maintenance of roads, water works and sewers, pumping stations, etc., in the territory of the division was satisfactorily performed.

Central Division.

During the month of September the total amount of material excavated by the Central Division was 1,574,238 cubic yards, of which 459,473 cubic yards were classified as earth and 1,114,765 cubic yards as rock. Of this quantity, 1,572,064 cubic yards were removed by steam shovels and 2,174 cubic yards by orange peel cranes. The total—1,574,238 cubic yards,—was primary excavation for the Canal prism. The daily average number of steam shovels at work during the month was 46.92 and the total number of shovel days was 1,173, as compared with 44.63 shovels at work during the month of August, with 1,205 shovel days.

For comparison with the work done by steam shovels during the corresponding month of the previous year, the following table is given:

Period.	Excavated by shovels.	Classification of material.		Av. No. of shovels at work.	W'kg days.	Av. yards per shovel day.
		Rock.	Earth.			
1909:	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*			*C. Y.*
Sept. ..	1,454,287	1,104,505	349,782	46.40	25	1,248.3
1910:						
Sept....	1,572,064	1,114,765	457,299	46.92	25	1,340 2

Rainfall at Empire: 1909, 7.22 ins.; 1910, 8.99 ins.

The above table shows the average output per shovel to be 7.36 per cent greater in September, 1910, than in the corresponding month of the previous year.

The total amount of material excavated from the prism in the Culebra section of the Central Division in September, 1910—1,339,948 cubic yards—was the greatest record in that section for the month of September, the next largest having been 1,235,978 cubic yards in September, 1909.

The total estimated amount of material to be removed in the Central Division was 97,125,018 cubic yards, and up to October 1, 1910, 63,321,815 cubic yards had been removed, leaving 33,803,203 cubic yards yet to be removed in order to complete all excavation in the Central Division. From these figures it will be seen that 65.2 per cent of all excavation in the Central Division had been completed up to the close of the month of September, and 34.8 per cent remained uncompleted.

Considering the two sections which compose the Central Division, the excavation completed and that yet to be completed at the close of September operations were as follows:

CULEBRA SECTION.	*Cubic Yards.*
Completed	53,164,665
To be completed	31,022,059
CHAGRES SECTION.	
Completed	10,157,150
To be completed	2,781,144

From the above figures it will be seen that the Culebra section, locally known as Culebra Cut is 63.15 per cent completed, and 36.85 per cent yet to be completed; the Chagres section is 78.5 completed and 21.5 per cent yet to be completed.

During the month the following quantities of material were hauled from the Canal prism and dumped into the embankment for the new roadbed for the relocation of the Panama railroad: 1,050 cubic yards in the vicinity of Pedro Miguel. The total amount to date used for this purpose is 3,714,318 cubic yards. One hundred and fifty-three thousand, nine hundred and eighty-two cubic yards of rock and earth from Culebra Cut were transported to Gatun for use in construction of the Dam. The total to date for this purpose is 1,985,599 cubic yards.

The average daily number of laborers at work on the whole division during the month was 8,327, while the average number of gold men working was 870.

Pacific Division.

DISTRICT NO. 1—LOCKS AND DAMS.

Excavation—The total excavation during the month amounted to 18,995 cubic yards, of which 10,405 cubic yards were taken from the Pedro Miguel lock site, and 8,590 cubic yards from the Miraflores lock site.

Filling and Embankment—During September, no additional dry-filling was placed in the prism of the west dam at Pedro Miguel, leaving the total quantity in place at the close of the month 260,852 cubic yards. Five hundred and seventy-eight cubic yards dry-filling were placed in back-fill, increasing the total amount to 16,521 cubic yards. At Miraflores, 11,220 cubic yards dry-filling were added to the toe; no hydraulic filling was added to the core of the west dam, making the totals at the end of the month 547,309 cubic yards and 138,587 cubic yards, respectively. No material was added to back-fill, leaving the total amount in place at the end of the month 133,545 cubic yards.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT PEDRO MIGUEL.

	Permanent Plant.	Auxiliary Plant.
Length of working day, hours..	9.00	9.00
Average number of hours per day worked laying concrete and large stone (actual working time)	6.66	*4.13
Average number of mixers per day	4.00	†.40
Average hourly output per mixer (actual working time)	*Cu. Yds.* 72.92	*Cu. Yds.* 19.35
Average amount of concrete and large stone laid per hour per chamber crane (actual working time)	74.51	....
Large rock laid	409.00	50.00
Concrete laid	48,725.00	1,518.00
Total concrete laid	49,134.00	1,568.00

* One locomotive crane in service 19 days and one derrick four days; total hours, 78.43.

† One 2-cubic yard mixer in service nine days.

PEDRO MIGUEL HANDLING PLANT.

The temporary mixer at the south end of the west storage trestle was completed and ready for use, and that at the south end of the east storage trestle was 80 per cent completed.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT MIRAFLORES.

	Permanent Plant.	Auxiliary Plant.
Length of working day, hours...	9.00	9.00
Average number of hours per day worked laying concrete and large stone (actual working time)	5.16	No plant
Average number of mixers per day	....	5.56
Average hourly output per mixer (actual working time)	*Cu. Yds.* No plant.	*Cu. Yds.* 19.90
Average amount of concrete and large stone laid per hour, per chamber crane (actual working time)	*27.71	No plant
Large rock laid	42.00	296.00
Concrete laid	2,716.00	15,079.00
Total concrete laid	2,758.00	15,375.00

*Laid by berm crane "F", in service 19 days.

MIRAFLORES HANDLING PLANT.

The berm crane on the east berm at Miraflores has been operated during the greater part of the month, being supplied from two 2-cubic yard cube mixers on the east storage trestle. The berm crane on the west berm was completed during the month. The west storage trestle was 40 per cent completed. Three ⅘-cubic yard concrete mixers were put in service in the early part of the month, and are being used on the floor system and head walls.

DISTRICT NO. 2—DREDGING.

The following is a statement of the output of the five dredges which were in operation during the month:

Dredge.	Type.	Work.		Plant.		Total.	Remarks.
		Earth.	Rock.	Earth.	Rock.		
		Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*	
Cardenas	Dipper	74,600	....	1,600	....	76,200	Place measurement
Badger	Ladder	50,145	15,794	....	....	65,939	Place measurement
Marmot	Ladder	83,827	12,645	....	....	96,472	Place measurement
Mole	Ladder	5,400	4,524	15,600	....	25,524	Place measurement
Culebra	Suction	226,650	....	....	....	226,650	Scow measurement
Total	....	440,622	32,963	17,200	....	490,785	

HYDRAULIC EXCAVATION PLANT.

The pumping station of the hydraulic excavation plant was completed and four pumps placed in operation. Two monitors have been in operation during the greater part of the month, as well as three 18-inch centrifugal dredging pumps. Two of the dredging pumps have been disposing of material disintegrated by monitors Nos. 1 and 2, while the third pump was used to pump water from the lock site.

BALBOA TERMINAL HARBOR.

Exploration borings were continued over the site of the Balboa terminal harbor, and 108,950 square feet of the area were cleared of mangrove trees and brush.

SAND AND CRUSHED ROCK.

The ladder dredge *Gopher* took out 44,100 cubic yards of sand at Punta Chamé, and the Ancon rock crusher plant delivered 58,244 cubic yards of crushed rock.

DISTRICT NO. 3—MUNICIPAL AND SANITARY ENGINEERING.

Apart from the operation and maintenance of pumping and filtration plants, the maintenance of roads, water mains and sewers, forces were engaged on municipal improvements in the city of Panama, and in the construction of roads for the Canal Zone Government. Sanitary drains and ditches were maintained and extended.

DISTRICT NO. 4—ANCON QUARRY.

Sixty-three thousand, two hundred and fifty-five cubic yards of material were excavated at the quarry. The following table summarizes the operations of the rock crushing plant:

PERFORMANCE OF ROCK CRUSHER PLANT.

	Hours.
Length of working day	9.00
Average number of hours per day (actual working time)	6.63
	Cu. Yds.
Average number of cubic yards crushed per hour of working day	258.86
Average number of cubic yards crushed per working hour	351.40
Total output for the month	58,244.00

Relocation of Panama Railroad.

During the month, 203,225 cubic yards of material were excavated, making the total excavation at the close of the month 4,545,553 cubic yards, and 287,993 cubic yards of material were placed in embankments, making the total at the close of the month 9,745,858 cubic yards.

A trestle 690 feet long was driven, numerous small culverts were built, and 780 linear feet of 70-pound track were taken up, leaving a total of 157,678 feet of 70-pound track and 18,997 feet of 90-pound track in place. The total force averaged 1,585 men.

Quartermaster's Department.

Labor—There was sufficient skilled labor of all classes on the Isthmus to meet demands.

Quarters—On account of the concentration of work at the Gorgona shops, it became necessary to provide quarters for 108 more American bachelors than were quartered in this settlement in August. To do this, it was necessary to remove several families from nonhousekeeping quarters and convert the houses into bachelor quarters. Owing to a reduction of force at Porto Bello, quarters at that point are no longer crowded.

Building—There was more construction work under way than during previous months, particularly in connection with the enlargement and repair of various schoolhouses in anticipation of the opening of the school year.

Material and Supplies—During the month, 27,825 tons of miscellaneous material, 2, 368,540 feet B. M. of lumber, 488 pieces of piling and 20,123 cross-ties were received. These supplies were valued at $808,017.04.

Subsistence Department.

The operation of the European laborers' messes and the colored laborers' kitchens showed a net profit of $5,601.35. The line hotels showed a net loss of $1,821.89, and the Hotel Tivoli, a net loss of $710.81. There was a profit of $174,37 on the operation of restaurants, penitentiary and dredge messes. The net profit on all subsistence operations was $3,243.02.

Department of Civil Administration.

COURTS.

Fifteen civil and 22 criminal cases were disposed of in the Circuit Courts of the Canal Zone, and 71 civil and 498 criminal cases in the District Courts.

DIVISION OF POSTS, CUSTOMS AND REVENUES.

Money order sales for September amounted to $466,121.28, and the fees to $2,025.53. Receipts from stamp and card sales, and newspaper postage, aggregated $7,322.07. The total collection of revenues made by the division was $21,243.21, and the collection on account of court fines, costs and fees, $2, 592.03.

Eighteen vessels entered at and 16 vessels cleared from the port of Ancon; and 15 vessels entered at and 19 vessels cleared from the port of Cristobal.

DIVISION OF POLICE AND PRISONS.

The total number of persons arrested was 500, of which 460 were men and 40 women, 45 nationalities being represented. The number of arrests shows a decrease of 118, as compared with the figures for the previous month. Nine convicts were committed to the penitentiary, and seven were discharged, leaving 145 convicts confined on September 30. The cost of guarding and subsisting the convicts was $2,648.60, and the value of their labor on roadwork was $2,068.

DIVISION OF FIRE PROTECTION.

There were six fires in the Canal Zone during the month. The estimated value of property involved was $307,350, and the damage was $18.95 to Government property, and $10 to private property.

DIVISION OF PUBLIC WORKS.

In the city of Panama the average daily consumption of water was 1,161,250 gallons, and in Colon 902,508 gallons.

The usual inspection and maintenance work of this division was performed during the month.

Department of Sanitation.

The total number of deaths from all causes among employes was 48, thirty-three being from disease and 15 from external causes. The death rate among employes for the month of September in this and previous years was as follows:

1904	14.31
1905	32.00
1906	57.34
1907	28.63
1908	12.78
1909	12.76
1910	11.47

The annual average per thousand for deaths in the cities of Panama and Colon, and in the Canal Zone, including both employes and the general population, was 21.60, as compared with 19.01 in September, 1909; 24.91 in September, 1908; 32.93 in September, 1907; and 54.54 in September, 1906.

The annual average death rate from disease per thousand for employes, segregating whites and blacks, was as follows: Whites, 3.58; blacks, 9.46.

The following diseases caused death: Malarial fever, 4; pneumonia, 6; pulmonary tuberculosis, 3; typhoid fever, 2; all other diseases, 18.

No cases of yellow fever, smallpox or plague originated on the Isthmus, or were imported during the month.

Respectfully,
H. F. HODGES, *Acting Chairman.*

OFFICIAL CIRCULARS.

Duties of Counsel and Chief Attorney.

CULEBRA, C. Z., October 4, 1910.

CIRCULAR NO. 183-O:

The Department of Law, created by the Executive Order of January 6, 1908, establishing an organization under the Isthmian Canal authorities, shall be under the direction of the Counsel and Chief Attorney, subject to the supervision of the Chairman and Chief Engineer.

In addition to the powers and duties assigned to him by the Executive Order of April 16, 1910, the Counsel and Chief Attorney shall be charged with the general supervision of the legal matters pertaining to the Commission, including the acquisition of right-of-way and the adjustment of land damages.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Approved: October 4, 1910.
ROBERT SHAW OLIVER,
Acting Secretary of War.

Acting Superintendent, Mechanical Division.

CULEBRA, C. Z., October 15, 1910.

CIRCULAR NO. 354:

Effective October 17, 1910, Mr. A. T. Corcoran will act as Superintendent of the Mechanical Division during the absence of Mr. A. L. Robinson, on leave.

H. F. HODGES, *Acting Chairman.*

Surplus Material and Supplies.

CULEBRA, C. Z., October 17, 1910.

CIRCULAR NO. 355:

Pursuant to the investigation of the method to be adopted to prevent the accumulation of surplus material and supplies, instituted by this office in letter of August 10, 1910, the following is published for the information of all concerned:

The Quartermaster's Department will continue to issue lists of surplus stock and material on hand, and a supply of these lists will be kept at all Quartermaster's storehouses.

The Quartermaster's Department is authorized to make substitutions in filling requisitions and foremen's orders, after consultation with the interested department or division, if this is practicable. If not practicable, the substitution is authorized with the understanding that the material may be returned if it cannot be used. All substitutions will be issued at the standard price in the price book.

In making "A" requisitions, particularly for spare parts, care should be exercised that an accumulation of such parts will not be left on hand owing to the probability of construction units being retired from service as the work nears completion.

The cooperation of all departments and divisions is enjoined.

H. F. HODGES,
Acting Chairman.

Examinations for Levelman and Transitman.

CULEBRA, C. Z., October 18, 1910.

SIRS: Examinations for promotions to the positions of levelman and transitman in the service of the Isthmian Canal Commission and the Panama Railroad Company on the Isthmus will be held at the Administration Building at Culebra on Sunday, October 30, and Sunday, November 6, 1910, at 9 a. m.

All rodmen and levelmen in the service of the Commission and the Panama Railroad Company on the Isthmus must take the examination in order to become eligible for promotion.

The examination for transitman may be taken by any rodman and if passed will render him eligible for promotion successively to levelman and transitman without further examination. Rodmen may also take the examination for levelman to qualify for promotion to that grade only.

All those who pass the examinations successfully will be equally eligible for promotion to the respective grades.

No levelmen nor transitmen will be hereafter selected in the United States for service on the Isthmus so long as there are eligibles on the Isthmus, who have become so by reason of these examinations, available for transfer or promotion.

Examinations will be both written and oral. They will consist of such practical problems as engineers in the service of the Commission are called upon to solve in the ordinary routine of their duties, and will be conducted with a view to ascertain the applicants' fitness for the work to be done. The written examination will have a weight of 40 per cent; experience and testimonials, 40 per cent; oral examination, 20 per cent.

More than three testimonials from each applicant are not desired. Similar examinations will be held every six months, or oftener, if circumstances require.

It is requested that you will advise the rodmen and levelmen under your direction that they will be expected to enter this first examination, and divide them into two squads, one to appear on October 30, and one to appear on November 6. A list of the men to be examined on either date should be forwarded as soon as practicable to Mr. A. B. Nichols, Chairman of the Examining Board.

H. F. HODGES,
Acting Chairman, Isthmian Canal Commission.
Second Vice-President, Panama Railroad Company.

District Dentist at Culebra.

ANCON, C. Z., October 15, 1910.

CIRCULAR:

Employes are advised that Dr. R. H. Brumby, district dentist at Culebra, has returned from leave of absence and is ready to continue his work.

ROBT. E. NOBLE,
Acting Assistant Chief Sanitary Officer.

Train Schedule in Case of Floods.

PANAMA RAILROAD COMPANY,
OFFICE OF GENERAL SUPERINTENDENT
COLON, R. P., October 7, 1910

CIRCULAR NO. 217:

To All Concerned: In case of high water at Black Swamp or Bridge 27, preventing the running of Panama railroad trains over the present main line, the following modified schedule will be put into effect without further notice:

High water between Bohio and Gatun—Trains Nos. 1, 3 and 7, and local south will run from Gatun over relocated line via Frijoles Junction to Frijoles, thence over main line.

Trains Nos. 2, 6 and 8, and local north will run over the main line to Frijoles, thence over relocated line via Frijoles Junction to Gatun.

Trains Nos. 4 and 5 will be annulled north of Frijoles.

Train No. 4 will run on regular schedule to Frijoles and back south as No. 5, approximately one hour late.

High water between Gorgona and Bohio—Trains Nos. 1, 3 and 7, and local south will run from Gatun over relocated line to Gamboa Bridge, and will come north to Gorgona before proceeding south.

Trains Nos. 2, 6 and 8, and local north will come to Gorgona before proceeding north via Gamboa Bridge.

Trains Nos. 4 and 5 will be annulled north of Gorgona.

Train No. 4 will run north to Gorgona on regular schedule and return to Panama as No. 5, approximately one-half hour late.

Sunday schedule—Trains Nos. 1, 23 and 27 will run south as above, to arrive at Panama approximately one hour late.

Trains Nos. 20 and 24 and pick-up will run north as above, to arrive at Colon approximately one hour late.

Trains Nos. 21, 25, 22, and 26 will be annulled.

Trains Nos. 28, 29, and 30 will be annulled north of Gorgona.

Trains Nos. 28 and 30 will run north to Gorgona on regular schedule and No. 29 will run south from Gorgona on regular schedule.

On steamer days passengers will take No. 2 (or No. 8 the previous evening). No. 6 will pick up the refrigerator cars *and will not carry passengers.*

Trains Nos. 3 and 6 will handle hospital car.

F. MEARS, *Acting General Superintendent.*

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

On Saturday night, October 15, Cristobal's first team took two out of three bowling games from Culebra's first team. The scores were as follows:

Cristobal.				Culebra.			
Louch......	163	205	213	Cohen....	199	164	148
Rabbitt.....	180	135	140	Herrington	168	142	139
Collins......	228	139	206	Cushing...	164	184	132
Burns......	174	138	139	Case......	173	143	138
Thomas.....	165	169	144	Dougherty.	167	207	158
Total.....	910	786	842	Total...	871	840	715

The local handicap bowling tournament closed last week. Prize for greatest number of games won was awarded to Mr. Hurst; prize for high average to G. C. Hayes; prize for second high average to Mr. Cohen.

The standing of the men in the chess tournament is as follows:

	Won.	Lost.
Bartlett....................	·4	7
Dubois......................	10	2
Goodenow....................	5	7
Mengel......................	2	7
Putnam......................	3	7
Stiles......................	5	5
Warner	8	1

The meeting of the discussion club held on Wednesday night, October 12, was led A. B. Dickson of Empire. Subject, "Responsibility."

Basketball practice will be held on Monday and Wednesday nights of each week. All men interested in basketball should come out and try for the team.

EMPIRE.

The meeting of the literary and debating society has been postponed from October 14 to October 28.

A large audience attended the entertainment given by the Empire Musical and Dramatic Society on Tuesday night, October 18. This society was organized under the auspices of the Y. M. C. A. and will in the near future cooperate with the Empire Stock Company, and produce a minstrel show and vaudeville program. The program presented at the Empire clubhouse on October 18, will be repeated at Cristobal on Friday evening, October 21.

Empire's second team defeated Gatun's second team two out of three bowling games on Saturday night, October 15, by the following scores:

Gatun.				Empire.			
Dalton.....	181	167	174	Giavelli...	123	154	155
Myers......	169	146	130	Nicodemus	137	157	162
Duryea.....	156	152	119	Sawtelle...	129	166	197
Wilson......	164	142	134	Goolsby...	177	162	212
Hodges.....	189	190	193	Bardelson.	215	173	189
Total.....	859	797	750	Total...	781	812	915

Gynasium classes will reopen on November 1.

GORGONA.

The meeting of the discussion club held on Tuesday evening, October 11, was led by Geo. R. D. Kramer of Culebra; subject, "Exercise." The meeting of the club to be held on October 25, will be under the leadership of R. G. Goodman of Cristobal; subject, "What is Happiness?"

On Wednesday evening, October 12, a bowling team from house No. 91 took three games from a team composed of the Y. M. C. A. employed force.

A smoker was held on Friday night, October 14. The Guatemalan quartet gave several numbers on the "mariumba," and there was an exhibition of wrestling between Frank Shoensiegel of Gorgona and Forest Mills of the U. S. S. *Tacoma*. Mr. Mills got one fall at the end of seventeen and one-half minutes.

The 200, or over, scores at bowling made during the week ending October 15 are as follows: Strock, 210; Reinhold, 212; Otis, 211; Gaedkie, 203; and Geo. Lowe, 212. This last was high score for the week.

The standing of the men in the "Night Hawks" bowling league is as follows:

	Handicap.	Played.	Won.	Lost.
McConaughey....	Scratch	14	9	5
Junker............	22	15	9	6
Strock............	12	19	11	8
Hoover............	12	7	4	3
Williams..........	19	22	11	11
Whitehead.........	19	9	4	5
Sammetinger.......	15	21	9	12
Hopkins...........	Scratch	15	6	9
Watkins...........	11	10	3	7
Calvit............	15	0	0	0

On Saturday night, October 22, Cristobal's second team will play at Gorgona, and Gorgona's first team will play at Cristobal.

The basketball league series will open on Saturday night, October 22, when Empire will play at Gorgona.

GATUN.

On the evening of October 17, a farewell reception was given Mr Warr in the gymnasium, which was decorated with pennants and college posters. R. M. Sands acted as chairman of the occasion. The program consisted of brief addresses by several of those present and several vocal and instrumental selections. Mr. Sands presented Mr. Warr with tokens of appreciation on behalf of the members and council of the association.

E. A. Putnam of Culebra was the leader at the discussion club meeting on Friday night, October 14; subject, "What Is Failure?"

Gatun's first team took two out of three games from Empire's first team on Saturday night, October 15, by the following scores:

Empire.				Gatun.			
Gustavson .	188	188	155	Barte.....	201	138	160
Gorham....	155	125	170	Harrington	150	193	....
Shaughnessy	171	159	147	DeMoll...	158	153	191
Pearson.....	191	126	184	Wolf......	188	171	150
Potter......	176	174	195	Durand...	190	137	188
				Severn............			148
Total.....	881	772	851	Total...	887	792	837

On Thursday evening, October 20, a smoker for the men of Gatun will be held. A good program is planned. All men in Gatun are cordially invited to be present.

CRISTOBAL.

A "smoker" was held at the clubhouse on Friday night, which was enjoyed by a large number of the members. The following program was given: Bass solo by Mr. MacArthur; characteristic songs by Messrs. King and Cullen; "The Hypnotist," given by the Empire Stock Company, introducing a comic scene called "The Chinese Laundry;" monologue and songs by Mr. Young of Empire; moving pictures.

A dramatic club was organized last week with the following officers: President, W. G. Manley; vice-president, C. C. Carr; secretary-treasurer, Miss Heine. It is planned to give a play in the near future. About 25 people bave signified their desire to take up this work. The club will meet at the clubhouse every Wednesday night.

Some good scores were made in the bowling match on Thursday night between the first and second Cristobal teams. Results were as follows:

First Team.				Second Team.			
Louch	146	177	178	Barrett....	182	166	220
Rabbitt.....	160	211	150	Weston...	186	210	155
Collins......	159	220	169	Gibson....	132	....	....
Burns, T....	179	166	152	Bullard...	147	141	159
Thomas.....	229	149	157	Blackburn.	168	150	148
				Adams, H.....		159	114
Totol.....	873	923	806	Total...	815	826	796

In the match between the Culebra and the Cristobal second teams on Thursday night the following scores were made:

Culebra.				Cristobal.			
Hall.......	156	147	192	Barrett. .	193	162	151
Hayes.....	181	155	136	Weston. .	162	139	199
Kop'ski, R.	143	184	138	Henry....	142	121	....
Kop'ski E.	168	117	135	Adams, D	166	161	192
Mengel....	144	139	221	Blackb'rn	155	159	197
				Turner............			140
Total....	792	*742	822	Total..	818	*742	879

*In the second game an extra frame was rolled and was won by Cristobal 70 to 68.

The following 200, or over, scores have been made so far this month: Louch, 217,201; Adams, D., 209, 232; Weston, 209; 210; Bullard, 203; Schofield, 204; Blackburn, 209; Barrett, 220; Rabbitt, 211; Collins, 220; Thomas, 229; Veen, 222.

The *Prinz Joachim* orchestra gave a very enjoyable concert at the clubhouse on Monday evening.

Tickets will be on sale Tuesday night for the Empire Operatic Company's show, which will take place Friday evening, October 21. The entire hall will be reserved.

The discussion club program was abandoned last week and there will be no meeting this week Next Thursday, Dr. Claud C. Pierce will take charge of the meeting, taking for his subject "Shall We Be Vaccinated?" The final meeting of the club will be held on Thursday, November 3; leader, A. B. Dickson of Empire. Subject, "Responsibility"

The basketball league will open at Cristobal on Saturday night, when Culebra plays.

The boys' department will take an all-day outing to Toro Point on Saturday of this week.

The library will be closed all of this week in order that the books may be recatalogued and checked. It will be opened again to the public on Monday, October 24.

A pressing club will probably be started in the near future. The methods and rates prevailing at the other Zone clubhouses will be adopted

PORTO BELLO.

Beginning October 16, Superintendent Gibbs has arranged to have a train leave town each Sunday at 3 p. m. to take gold employes and their families around to the bathing beach. This train will return about 5 p. m. The locomotive engineers have volunteered their services for these special trips.

The dock and float in connection with the clubhouse is now completed and open to the use of boats and bathers.

The standing of the men in the pool tournament is as follows:

Class A.	Played.	Won.	Lost.
Wilson.............	5	5	0
Hill...............	6	4	2
Stoll..............	6	4	2
Tuttle.............	5	2	3
Cornick............	4	1	3
Ross...............	5	1	4
Class B.			
Richardson.........	7	7	0
Elliott............	4	4	0
Wallen.............	4	3	1
McDonald...........	4	2	2
Bowen..............	2	1	1
Sweeney............	4	1	3
Beattie............	5	0	5
Van Fleet..........	4	0	4
King...............	2	0	2

Mr. Pflueger played the members of the chess club simultaneously on October 7. Mr. Hanbury played the club on October 14.

Band Concerts.

The Isthmian Canal Commission Band will give a concert at Las Cascadas, C. Z., on Sunday, October 23, 1910, at 6 p. m. The program follows:

1 March—*Col. Sullivan*.........Barrington-Sargent
2 Overture—*Poet and Peasant*..............Suppe
3 Concert Piece—*Chimes of Love*..........d'Albret
4 Medley Selection—*Mill's* 1910 *Songs*......Schulz
Introducing "Lily of the Prairie," "I'd Like to be the Fellow That Girl is Waiting For," "Highland Mary," "Everybody's Happy When the Moon Shines," "You For Me When You're Sweet Sixteen," "Comical Eyes," "Sicilian Chimes," "My Friend Jim-a-da-Jeff" and "Margarita."
5 Waltz—*Bad'ner Mad'ln*................Komzak
6 Intermezzo—*Silver Bell*................Wenrich
7 El Gitanillo—*Tango*....................Franco
8 Selection—*Bright Eyes*.................Hoschna
9 Barn Dance—*By the Light of the Silvery Moon*.......................Edwards
10 March—*The Coming Regiment*.........Conterno

The Isthmian Canal Commission Band will give a concert at Cristobal, C. Z., on Wednesday, October 26, 1910, at 8 p. m. The program follows:

1 March—*Willow Grove* (By request).....Sorentino
2 Selection—*Bright Eyes*.................Hoschna
3 El Gitanillo—*Tango*....................Franco
4 Overture—*Raymond*....................Thomas
5 a Concert Piece—*Chimes of Love*.....d'Albret
b Hymn—*Rock of Ages* (By request)..Hastings
Brass Quartet
6 Medley Selection—*The Cristobal Minstrels*.Jennings
Introducing "Prairie Song-bird," "How Do You Do, Miss Josephine?" "Won't You Change Your Name?" "I Am Awful Glad I Met You," "Could You Learn to Love Me," "Can't You See," "Pony Boy," "Strawberries," "Schoolmates," "Molly Lee," and "When We Are Out on Dress Parade."
7 Waltz—*Cupid Astray*....................Rolfe
8 Selection—*Bohemian Girl* (By request)......Balfe
9 Intermezzo—*Silver Bell*................Wenrich
10 March—*Militar*.......................Franco

CHAS. E. JENNINGS, *Musical Director.*

A concert will be given at Gatun on Sunday, November 6, at 2 p. m.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending October 26, 1910, (75th meridian time):

DATE.	Low.	High.	Low.	High.	Low.
	A. M.	A. M.	A. M.	P. M.	P. M.
October 20......	......	4.29	10.50	4.56	11.08
October 21......	......	5.12	11.33	5.38	11.52
			P. M.		
October 22......	......	5.55	12.20	6.24	......
October 23......	12.40	6.41	1.08	7.13	......
October 24......	1.30	7.32	2.00	8.08	......
October 25......	2.30	8.30	3.02	9.14	......
October 26......	3.38	9.42	4.13	10.33	......

Public Sale of Carpenter's Tools, Etc.

There will be sold at public auction, at the Quartermaster's Depot at Mount Hope, at 2 p. m., October 29, 1910, a full line of carpenter's tools, such as awls, bits, chisels, gimlets, mortise gauges, draw knives, planes, saws, shaves, squares; also items of beds, chalk, surrey, corn knives, etc. Purchasers will be required to pay in cash before removal of articles, and all articles sold must be removed within 48 hours from date of sale. These articles may be seen on any week day upon application at the office of the Depot Quartermaster. Catalogue will be furnished upon request. The right is reserved to reject any or all bids.

CHARLES L. PARKER,
Acting Depot Quartermaster.

LOST—At Hotel Tivoli on Saturday, October 8, a class pin with initials F. R. M. and figures '09. Finder will please leave the pin at Hotel Tivoli.

COMMISSARY DEPARTMENT.

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning October 15.

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	7
Shoulder, neck trimmed off, (4 lbs. and over), per pound	10
Entire forequarters (not trimmed) 10 pounds and over, per pound	9
Legs, (8 to 10 pounds), per pound	19
Cutlets, per pound	20
Short cut chops, per pound	22
Lamb—Stewing, per pound	7
Entire forequarters, neck trimmed off, per pound	10
Legs (5 to 8 pounds), per pound	24
Chops, per pound	26
Cutlets per pound	26
Veal—Stewing, per pound	10
Shoulder for roasting (not under 4 pounds), per pound	15
Loin for roasting, per pound	19
Chops, per pound	22
Cutlets, per pound	26
Pork cuts, per pound	22
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	9
Corned, per pound	12, 14. 16
Chuck roast, (3 pounds and over), per pound	13
Pot roast, per pound	15
Rib roast, second cut (not under 3½ pounds), per pound	18
Rib roast, first cut (not under 3 pounds), per pound	20
Sirloin roast, per pound	21
Rump roast, per pound	21
Porterhouse roast, per pound	21
Steak, Chuck, per pound	14
Round, per pound	15
Rib, per pound	20
Sirloin, per pound	21
Porterhouse, per pound	21
Rump, per pound	21
Tenderloin, per pound	24

MISCELLANEOUS.

Livers—Beef, per pound	10
Calf, each	60
Half, each	30
Sausage—Pork, per pound	17
Bologna, per pound	14
Frankfurter, per pound	14
Leberwurst, per pound	14
Sweet bread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	32
Eggs, fresh, ½ dozen only	18
Bluefish, fresh, per pound	16
Cod, fresh, per pound	10
Halibut, fresh, per pound	13

POULTRY AND GAME.

Chickens—Fancy Roasting, large, each	1.50
medium, each	1.30
Fowls, each	70, 82, 93, 1.04, 1.15
Ducks, large, each	1.50
medium, each	1.30
Broilers, each	75
Turkeys, per pound	30
Squabs, each	35
Capons, each	2.50
Geese, fatted, each	2.60
Pheasants, each	70, 1.00
Partridges, each	50
Grouse, each	85

CURED AND PICKLED MEATS.

Ham—English York Cut, per pound	30
German, Westphalia, per pound	36
Sugar cured, per pound	*22
Sugar cured, sliced, per pound	*25
Half, for boiling, per pound	*23
Boiled, per pound	*28
Hocks, per pound	‡8
Bacon—Breakfast, whole piece, per pound	30
Breakfast, sliced, per pound	31
Beef, salt, family, per pound	*10½
Pork, salt, family, per pound	*15
Ox tongues, each	80
Pigs' feet, per pound	10
tongues, per pound	16
Mutton, mess, per pound	7

DAIRY PRODUCTS.

	Price.
Butter—Creamery special, per pound	40
Cheese—Roquefort, per pound	38
Philadelphia Cream, cake	10
Young America, per pound	22
Swiss, per pound	26
Edam, each	1.00
Camembert, in 2-pound tins, tin	38
Camembert, in ½-pound tins, tin	14
Neufchatel, each	6
Gouda, per pound	34
Parmesan, per pound	35
Milk, Briarcliff, bottle	**25
Buttermilk, bottle	**15

VEGETABLES AND FRUITS.

Beets, per pound	*3
Celery, per head	6
Carrots, per pound	3½
Cabbage, per pound	*3
Cucumbers, per pound	5
Lettuce, per head	5, 7, 10
Onions, per pound	*3
Potatoes, white, per pound	3½
sweet, per pound	2½
Squash, per pound	4
Tomatoes, per pound	*6
Turnips, per pound	3
Yams, per pound	3½
Apples, per pound	5
Grapes, per pound	8, 14
Grape fruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12
Peaches, per pound	8, 10
Pears, per pound	8
Plums, per pound	10

*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from Commissaries; no orders taken for delivery.

Rainfall from October 1 to 15, Inclusive.

MIDNIGHT TO MIDNIGHT.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	1.98	10	5.08
Balboa	1.77	10	5.74
Miraflores	95	2	3.99
Pedro Miguel	1.01	9	3.55
Rio Grande	1.68	9	4.59
Central Section—			
Culebra	1.65	9	3.80
Camacho	1.82	9	3.99
Empire	1.70	9	3.51
Gamboa	2.19	10	5.75
Alhajuela	1.80	10	5.06
El Vigia	1.17	10	5.52
Gorgona	2.30	10	4.95
San Pablo	1.48	10	3.27
Tabernilla	.78	10	3.50
Bohio	1.19	15	4.62
Trinidad	2.45	15	7.22
Monte Lirio	.95	4	3.28
Atlantic Section—			
Gatun	1.75	5	6.13
Brazos Brook	.79	4	3.20
Cristobal	2.94	5	5.43
Porto Bello	1.20	5	*3.89
Nombre de Dios	.17	5	0.65

*To 5 p. m., October 14.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, October 15, 1910. All heights are in feet above mean sea level.

DAY AND DATE	STATION.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sunday, Oct. 9	129.4	95.5	49.6	17.2	16.5
Mon. Oct. 10	131.4	97.1	52.6	18.9	16.9
Tues. Oct. 11	129.6	96.2	52.4	19.2	17.6
Wed. Oct. 12	127.7	94.2	48.0	17.9	17.6
Thurs. Oct. 13	127.4	94.0	47.6	17.4	17.2
Friday, Oct. 14	128.3	93.9	47.5	16.9	16.7
Sat. Oct. 15	130.4	95.8	48.9	16.5	16.3
Height of low water	125.0	92.0	46.0		

Proposal for 86,000 Feet Guayacan (Lignum Vitae) Lumber.

MOUNT HOPE, C. Z., October 15, 1910.

Sealed proposals will be received at the office of the Purchasing Agent on the Isthmus, Mount Hope, C. Z., until 2 o'clock p. m., November 2, 1910, at which time they will be opened in public, for furnishing 32,000 feet, board measure, of guayacan lumber, of sizes 6"x6", 6"x8", 6"x10", and 6"x12", in 8-foot lengths, and 54,000 feet, board measure, of guayacan lumber, sizes 6"x6", 6"x8", 6"x10", and 6"x12", in 10-foot lengths. Bidders will be required to indicate time necessary for delivery of material, and submit sample of same. Delivery will be accepted on board cars at any point along the Panama railroad. The right is reserved to reject any or all bids. Bids should be addressed to Charles L. Parker, Purchasing Agent on the Isthmus, Mount Hope, C. Z.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company, of the Royal Mail Steam Packet Company, of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Advance	P. R. R.	Monday	Oct. 17
Panama	P. R. R.	Saturday	Oct. 22
Allianca	P. R. R.	Friday	Oct. 28
Colon	P. R. R.	Friday	Nov. 4
Advance	P. R. R.	Thursday	Nov. 10
Panama	P. R. R.	Wednesday	Nov. 16
Allianca	P. R. R.	Tuesday	Nov. 22
Colon	P. R. R.	Monday	Nov. 28

CRISTOBAL TO NEW YORK.

Colon	P. R. R.	Sunday	Oct. 23
Advance	P. R. R.	Saturday	Oct. 29
Panama	P. R. R.	Friday	Nov. 4
Allianca	P. R. R	Thursday	Nov. 10
Colon	P. R. R.	Wednesday	Nov. 16
Advance	P. R. R.	Tuesday	Nov. 22
Panama	P R. R.	Monday	Nov. 28
Allianca	P. R. R.	Sunday	Dec. 4
Colon	P. R. R.	Saturday	Dec. 10

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 4th and 25th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Zacapa	U. F. C.	Thursday	Oct. 13
Tagus	R.-M.	Saturday	Oct. 15
Almirante	U. F C.	Thursday	Oct. 20
Prinz Aug. Wilhelm	H.-A.	Saturday	Oct. 22
Santa Marta	U. F. C.	Thursday	Oct. 27
Oruba	R.-M.	Saturday	Oct. 29
Metapan	U. F. C.	Thursday	Nov. 3
Prinz Joachim	H.-A.	Saturday	Nov. 5
Zacapa	U. F. C.	Thursday	Nov. 10
Magdalena	R.-M.	Saturday	Nov. 12
Almirante	U. F. C.	Thursday	Nov. 17
Prinz Aug. Wilhelm	H.-A.	Saturday	Nov. 19
Santa Marta	U. F. C.	Thursday	Nov. 24
Clyde	R.-M.	Saturday	Nov. 26
Metapan	U. F. C.	Thursday	Dec. 1
Zacapa	U. F. C.	Thursday	Dec. 8
Atrato	R.-M.	Saturday	Dec. 10

COLON TO NEW YORK.

Metapan	U. F. C.	Friday	Oct. 21
Prinz Joachim	H.-A.	Tuesday	Oct. 25
Zacapa	U. F. C.	Friday	Oct. 28
Magdalena	R.-M.	Monday	Oct. 31
Almirante	U. F. C.	Friday	Nov. 4
Prinz Aug. Wilhelm	H.-A.	Tuesday	Nov. 8
Santa Marta	U. F. C.	Friday	Nov. 11
Clyde	R.-M.	Monday	Nov. 14
Metapan	U. F. C.	Friday	Nov. 18
Prinz Joachim	H.-A.	Tuesday	Nov. 22
Zacapa	U. F. C.	Friday	Nov. 25
Atrato	R.-M.	Monday	Nov. 28
Almirante	U. F. C.	Friday	Dec. 2
Prinz Aug. Wilhelm	H.-A.	Tuesday	Dec. 6

NEW ORLEANS TO COLON.

Atenas	U. F. C.	Saturday	Oct. 15
Turrialba	U. F. C.	Saturday	Oct. 22
Abangarez	U. F. C.	Saturday	Oct. 29
Atenas	U. F. C.	Saturday	Nov. 5
Turrialba	U. F. C.	Saturday	Nov. 12
Abangarez	U. F. C.	Saturday	Nov. 19

COLON TO NEW ORLEANS.

Turrialba	U. F. C.	Thursday	Oct. 13
Abangarez	U. F. C.	Thursday	Oct. 20
Atenas	U. F. C.	Thursday	Oct. 27
Turrialba	U. F. C.	Thursday	Nov. 3
Abangarez	U. F. C.	Thursday	Nov. 10
Atenas	U. F. C.	Thursday	Nov. 17
Turrialba	U. F. C.	Thursday	Nov. 24

COLON TO BARBADOS, CALLING AT TRINIDAD.

Tagus	R.-M.	Tuesday	Oct. 25
Oruba	R.-M.	Tuesday	Nov. 8

The next sailing of the Leyland Line will be as follows: *Mexican* on or about October 25, for New Orleans, via Kingston, Ja.

Hamburg-American steamers leave for New York at 10 a. m., and for Port Limon every Tuesday or Wednesday.

Royal Mail steamers leave for New York on alternate Mondays at 5 p. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans leave on Thursday at 3 p. m., and for New York on Friday at 10 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3rd and 20th of each month.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, OCTOBER 26, 1910. No. 9.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Rapid Movement in Cucaracha Slide.

On May 25 there was a movement of earth and rock on the east side of Culebra Cut in what is known as Cucaracha slide, and it was estimated that 500,000 cubic yards of material had broken away from the bank and was gradually sliding into the Canal prism. Excavation of this mass of material has continued with few interruptions until the present time, and there remain to be removed only about 175,000 cubic yards of the original 500,000. This remaining material, which is almost entirely earth, received a new impetus on the afternoon of October 22, and there ensued the most rapid movement of a large mass of earth that has yet been experienced in the excavation of Culebra Cut.

At 4.40 o'clock the material began to move toward the Canal axis and by 5 o'clock the toe had advanced 75 feet toward the axis, completely filling the pioneer shovel cut and drainage ditch, carrying away all four of the construction tracks on the east side of the Cut, catching and imprisoning 16 Lidgerwood flat cars, locomotives Nos. 227 and 280, and steam shovels Nos. 254 and 208. Shovel No. 208 was moved laterally a distance of 50 feet and remained on its tracks, perfectly horizontal, so that it could have resumed excavating as soon as the movement ceased if there had been any way of sending cars to it to take away the spoil. All the equipment caught in the slide will be extricated this week and the excavation will continue as heretofore.

No new material was set in motion by this movement in Cucaracha slide, and the statement heretofore made, that this and all slides that have so far developed in Culebra Cut represent about 15 per cent of the total excavation remaining, still holds good.

Improvements to Balboa Port Terminal.

The improvement of the terminal facilities at the port of Balboa was begun on Monday, October 24, when the dredge *Marmot* was transferred from its former position in the Canal channel opposite the Corozal flats and set at work removing a part of the mud spit in front of the shipways. A 300-foot channel will be dredged from that point to the site of the proposed concrete dock, north of the sand unloading dock, to a depth of 45 feet, which will provide ample room for the navigation of ships. As the present channel width is less than 200 feet, a cut over 100 feet wide will be made. Plans for the changes to be made to the Panama Railroad Company's steel pier, and other improvements in connection with the enlargement of dock facilities, are being prepared in the drafting office of the railroad at Colon.

Canal Record Index.

The index to Vol. III of THE CANAL RECORD, in form suitable for binding with the year's issues of the paper, will be ready for distribution shortly. It will be sent free, on application, to such persons, institutions, libraries, etc. as desire to preserve their copies of THE CANAL RECORD in book form.

High Water in the Chagres.

High water in the Chagres River during the week ending October 22 made it necessary for the steam shovels which are excavating in the Canal prism at Gorgona and Mamei to cease work on October 20, 21, and 22. The water rose above the fire boxes of the shovels and inundated the construction tracks, making a continuation of work impossible. These floods are expected and the procedure is to merely wait until the water subsides and then start work again. Meanwhile the river dumps are cleaned by the high water.

A statement of the stages of the river, during the week referred to, follows, all elevations being above mean sea level:

DAY AND DATE	STATION.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sunday, Oct. 16	129.4	95.5	49.4	16.9	16.4
Mon. Oct. 17...	127.6	94.0	47.4	16.4	16.3
Tues. Oct. 18...	135.4	99.5	52.3	16.5	16.0
Wed. Oct. 19...	136.6	100.1	53.8	19.1	17.1
Thurs. Oct.20..	137.8	101.0	55.3	20.7	17.1
Friday, Oct. 21.	136.3	101.0	56.1	23.2	20.1
Sat. Oct. 22....	131.1	96.5	53.5	22.4	20.3
Height of low water.......	125.0	92.0	46.0		

Further Economies in the Shops.

An order has been placed for three sandblast machines, with flexible hose and nozzles, to be used in removing scale from steel cars when they are brought into the shops at Gorgona for repairs.

A washer machine has also been ordered. It will be capable of punching washers from 3-16 of an inch to two inches in diameter. Scrap metal will be used for the washers, thus giving it a greater value than it has as scrap, and at the same time making it unnecessary to buy in the States the large amount of washers required by the mechanical work.

The Taylor-Barth system of caring for leather belts is to be installed at the Gorgona shops. It consists of two parts, the first being a card index by which accurate account of the condition of the belts is kept, and the second a belt-cutting machine. By the use of this machine a belt can be cut to its proper length under tension, so that when the ends are united with wire lacing it will be at the tension proper for the transmission of power. A record will be kept of the dates on which each belt may need adjustment, and on that day, the inspector will restretch and recut it. Thus the belts will always be in condition, so that no machine need be stopped for relacing and replacing them. The readjustment will be done during the noon hour and between 5 and 7 o'clock in the evening, after the day shift has quit work and before the night shift has begun.

Excavation in Empire District.

On October 12, twenty steam shovels of the 100-ton class working in the Empire construction district of the Central Division, excavated 25,623 cubic yards in an 8-hour day, an average of 1,281 cubic yards for every shovel in the district on that date. During this period, the shovels were under steam 160 hours; were actually at work 116 hours and 25 minutes; were waiting for cars 23 hours and thirty minutes, the rest of the time being lost in moving back, repairing shovels, cleaning track, etc.

Adjustment of Land Claims.

An agreement has been reached between the Isthmian Canal Commission and the Panama Railroad Company, through their Counsel and Chief Attorney, and Hinckley and Ganson of Panama, representing 58 claimants, whereby claims for improvements on lands to be inundated by the waters of Gatun Lake will be adjusted for $21,559. The claimants' estimate of the value of the improvements was $66,000. Originally, 116 claims were presented, but only 58 of these were adjusted, some were rejected, and about thirty remain to be settled.

Agents of the Panama Railroad Company were sent into the Trinidad valley to locate the claims on blue prints showing the situation and elevation of each holding, and to determine the character of the improvements. The Counsel and Chief Attorney will arrange for the identification of the claimants at the time the payments are to be made, and thus a double check will be obtained on the land and the claimants. No allowance was made for clearing or for yearly crops, but the occupants may remain on the land to gather the crops at their own risk until the land is flooded. Improvements may be moved.

Outside of the Canal Zone and in the Trinidad valley 34 claimants were found on

NOTES OF PROGRESS.

(Continued.)

Panama railroad land and their claims were allowed at $14,799; inside the Canal Zone on railroad lands there were 13 claimants whose claims were adjusted at $6,210. All this land is owned by the Panama Railroad Company on grant from the Colombian Government. Eleven claimants on land owned by the United States Government at Guarapo, near Gatun, title having been acquired from the French canal company, were allowed $550.

High Tides at Pacific Entrance.

High tides accompanied by high winds at the Pacific entrance to the Canal last week drove the water at times over the breakwater which is being built from the shore line toward Naos Island. On October 16, the amplitude, the difference between high and low tide, was 10.8 feet, on October 20, the amplitude was greatest, 20.6 feet, and on October 22 it had fallen to 17.2 feet. On October 20, the lowest low tide was 9.6 feet below mean sea level, and the highest high tide was 11 feet above mean sea level. The maximum altitude recorded since December 23, 1905, was that of April 11, 1910—20.8 feet, and the maximum amplitude last week was only two-tenths of a foot less than this. The maximum amplitude each year since 1905, as compared with that of October 20, is shown in the following statement:

1906, May 9 and November 18	20.1 feet
1907, January 16	19.0 feet
1908, October 11	20.1 feet
1909, October 2	20.6 feet
1910, April 11	20.8 feet
1910, October 20	20.6 feet

Concrete in Gatun Locks.

The concrete work in Gatun Locks is about 39 per cent completed, 822,668 cubic yards out of a total of 2,095,000, having been placed at the close of work on October 22. The record of concrete placed each day last week, and the total up to and including October 22, is shown in the following statement:

DATE.	Concrete placed.	Large stone.	Hours worked.	No. of mixers	Total.
	Cu. Yds.	*Cu. Yds.*			*Cu. Yds.*
Oct. 17.	3,000	323	90:16	8	3,323
Oct. 18.	3,434	326¾	87:27	8	3,760¾
Oct. 19.	3,304	349¼	95:52	10	3,653¼
Oct. 20.	2,734	340¼	87:20	10	3,074¼
Oct. 21.	3,072	358	92:28	8	3,430
Oct. 22.	2,873	249	90:42	8	3,122
Total.	18,417	1,946¼	....	......	20,363¼
Previously reported	....	....	....	......	802,305¼
Grand total.	....	....	....	......	822,668½

Miraflores Locks.

The output of concrete with the temporary plant in the upper lock at Miraflores is now averaging over 800 cubic yards for each 8-hour day. The work is done by six mixers, two of which are of two cubic yards capacity, and the others of one-half cubic yard capacity each. There are two other small mixers assigned to these locks, but they are undergoing a general overhauling having been in commission almost continuously for nearly a year and a half.

The lateral culverts in both 400-foot chambers and six in the east and five in the west 600-foot chambers of the lock have been finished, the foundation of the east side wall has been extended for about one-half of its total length, and work on the north head walls has made headway. The output of the trestle mixers is entirely utilized in the construction of the east side wall, it being desired to build it as rapidly as possible in order to curtail inconvenience from slides which occur in the earth bank after heavy rains. The work of removing the remaining excavation in the west chamber by steam shovel is in progress. The west berm crane will be completed in a few days, but will probably not be used to any extent until the west wall excavation is finished.

The record of concrete placed at these locks during the six 8-hour working days of the week ending October 22, and of the total laid to that date, follows:

DATE.	AUXILIARY PLANT.			
	2-Cubic yard mixers.	½-Cubic yard mixers.	Large stone.	Total.
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*
October 17	381	495	18	894
October 18	434	485	10	929
October 19	444	442	5	891
October 20	288	428	....	716
October 21	340	524.5	5	869.5
October 22	318	270	5	593
Total	2,205	2,644.5	43	4,892.5
Previously reported	....	....	920	39,884
Grand total	....	....	963	44,776.5

Knights of Columbus.

All members of the Knights of Columbus on the Isthmus, who are not affiliated with Panama Council, No. 1371, are requested to send their names, council number, and location to the undersigned for insertion in the directory.

WM. J. ERGENZINGER, *Grand Knight.*
Empire, C. Z. October 23 1910.

In case the harbor at Colon is too rough during the visit of President Taft, November being one of the months when "northers" are frequent, the cruiser on which he comes and its convoy can be coaled in the bay at Porto Bello. An inquiry as to the conditions for coaling at Porto Bello has been answered to the effect that there is no swell and very little tide in the harbor, and that ships can lie at anchor and swing in any direction without touching bottom.

Lock Work at Pedro Miguel.

A statement of the concrete laid in the locks at Pedro Miguel during the six 8-hour working days of the week ending October 22, and of the total laid to that date, follows:

DATE.	CUBIC YARDS.			
	Construction plant.	Auxiliary plant.	Large stone.	Total.
October 17	1,984	272	18	2,274
October 18	1,646	182	14	1,842
October 19	1,984	150	6	2,140
October 20	1,982	154	10	2,146
October 21	2,052	298	14	2,364
October 22	2,058	262	....	2,320
Total	11,706	1,318	62	13,086
Previously reported	....	....	3,352	341,447
Grand total	....	....	3,414	354,533

Obituary.

James Lynch, a white American, employed by the Pacific Division, died at Ancon Hospital on October 13, aged 38 years. His home was in New York where his brother lives at 340 State street. He had been on the Isthmus six months.

Notice to Shriners.

All members of the Ancient Arabic Order, Nobles of the Mystic Shrine, please send your name, name of temple, and Isthmian address to the undersigned at your earliest convenience, also indicating whether or not you have your "fez" on the Isthmus. Shriners not having a "fez" are advised to send for one at once. GERALD D. BLISS.
Pedro Miguel, C. Z., October 21, 1910.

Sailing of the Ancon.

The sailing of the steamship *Ancon* has been fixed for 3 p. m., Thursday, October 27, from pier No. 11, Cristobal.

LABOR FORCE AND QUARTERS IN SEPTEMBER.

On September 28, there were 35,369 employes actually at work on the Canal and the Panama railroad, and of the number, 29,688 were Canal employes. The gold force on the Canal work, composed almost entirely of white Americans, was 4,459.

The report of the Chief Quartermaster for September shows that the number of family quarters occupied by "gold" employes was 1,704, which is 4 less than in August, and the occupants numbered 5,221, an increase of 41. Of this number, 1,765 were women, and 1,755 children. Bachelor quarters occupied by "gold" employes numbered 1,899 and the occupants numbered 3,336, of whom 121 were women. The family quarters occupied by European laborers numbered 291, and the occupants, 920: bachelor quarters, 116, and the number of occupants, 5,362. The family quarters occupied by West Indians numbered 1,077, and the occupants, 3,519: bachelor quarters, 266, and the number of occupants, 4,885,

A statement of the force actually at work on September 28, follows:

DEPARTMENT.	Monthly.	Artisans.					European Laborers.		West Indian Laborers.					Total Silver.	Total Gold.	Grand Total.
		44 cents.	32 cents.	25 cents.	20 cents.	16 cents.	20cents.	16 cents.	20 cents.	16 cents.	13 cents.	10 cents.	7 cents.			
Const'ct'n and Eng'r'ng.	4,346	16	25	275	656	2,617	3,171	1,658	114	554	3,307	3,684	283	20,706	3,386	24,092
Civil Administration	160	..	..	2	3	18	......	......	...	.....	......	5	....	188	301	489
Sanitation	692	..	..	2	3	2	2	4	...	.....	3	378	8	1,094	372	1,466
Quartermaster's	1,009	3	2	82	179	163	238	17	14	.....	10	894	11	2,622	227	2,849
Subsistence	605	..	..	1	1	......	......	......	...	.....	......	......	....	607	61	668
Disbursements	8	..	..	....	....	......	......	......	...	.....	......	......	....	8	21	29
Examinat'n of Accounts.	4	..	..	....	....	......	......	......	...	.....	......	......	....	4	91	95
Total	6,824	19	27	362	842	2,800	3,411	1,679	128	554	3,320	4,961	302	25,229	3,459	29,688

Panama railroad force, 3,080; Panama railroad relocation force, 1,593; Panama railroad commissary force, 1,008. Total, 5,681. I. C. C. force, 29,688. Grand total, 35,369.

POLITICAL ACTIVITY.

Government Employes May Not Take an Active Part in Political Movements.

At the request of the Civil Service Commission, the portion of the circular warning against activity in politics by federal officers and employes, which is applicable to I. C. C. employes, is published for the information of all concerned.

The Isthmian Canal Commission will cooperate with the Civil Service Commission in punishing violations of the rules and laws specified.

WARNING AGAINST ACTIVITY IN POLITICS BY FEDERAL OFFICERS AND EMPLOYES.

2. *Political Assessments or Contributions*—The Civil Service Act provides that "no person in the public service is for that reason under any obligations to contribute to any political fund, or to render any political service, and * * * * * he will not be removed or otherwise prejudiced for refusing to do so." Section 118 of the Criminal Code provides that no Federal officer or employe shall, directly or indirectly, solicit or receive, or be in any manner concerned in soliciting or receiving any political assessment, subscription, or contribution from any other Federal officer or employe. Section 120 of the Criminal Code prohibits the discharge, promotion, or degrading of any officer or employe for giving or failing to make any political contribution. Section 121 of the Criminal Code prohibits any Federal officer or employe from making any such political contribution to another Federal officer or employe, and Section 119 prohibits the solicitation or receipt of any political contribution in any room or building occupied in the discharge of official duties by any officer or employe of the United States, or on other Federal premises, by any person whatsoever, whether in the public service or not. In connection with this latter provision the United States Supreme Court has held that a solicitation by letter or circular addressed and delivered by mail or otherwise to an officer or an employe of the United States at the office or building in which he is employed in the discharge of his official duties, is a solicitation within the meaning of the law, the solicitation taking place where the letter was received. Section 122 of the Criminal Code provides that whoever shall violate any provision of the four sections above mentioned shall be fined not more than $5,000, or imprisoned not more than three years, or both.

It is the duty of the Civil Service Commission to see that the Civil Service Act and Rules and the above mentioned sections of the Criminal Code, which were originally enacted as a part of the Civil Service Act, are strictly enforced and it will employ every legitimate and available means to secure the prosecution and punishment of persons who may violate them. The Commission requests any person having knowledge of any such violation to lay the facts before it that it may at once take action thereon.

Electrical Workers.

Local Lodge, No. 214, International Brotherhood of Electrical Workers, was instituted at Ancon lodge hall on October 9, by Past President H. C. Martell, with 41 charter members. The following officers were elected and installed: President, Charles Potter; vice-president, Wells H. Hall; treasurer, Walter B. Smith; recording and financial secretary, J. L. Harding; press secretary, James H. O Connell; foreman, Rudolph Oetter, Jr.; trustees, John Boland, William A. Kelly, H. E. Weitzel; inspectors, J. S. Marsh, R. M. McDonald. Committees from the International Brotherhood of Steam Shovelmen and Dredgemen, and the Brotherhood of Railway Trainmen were present. The institution of the local lodge, the charter for which was granted in July, was largely due to the fact that electrical workers, on account of prohibitive rates, are practically barred from insurance benefits. The Brotherhood now pays a death benefit of $100, but it is proposed to increase the amount to $2,500 as soon as possible after the first of the year, and in addition, there will be disability and total disability payments of $1,000 and $1,500, respectively. The regular meetings will be held at Ancon lodge hall at 1.30 p. m., on the second and fourth Sundays of each month.

Local Union, No. 677, International Brotherhood of Electrical Workers, will hold meetings in Gatun lodge hall on Wednesday night, October 26, at 8 o clock, and on Sunday afternoon, October 30, at 2.30 o clock. Applications for charter membership must be made before 2.30 p. m., October 30. All electrical workers are invited to attend these meetings.

J. W. SMITH, *Recording Secretary.*

Gatun, C. Z., October 21, 1910.

An open meeting of Local Lodge, No. 214, of the International Brotherhood of Electrical Workers will be held at Ancon lodge hall on Sunday, October 30, 1910, at 1.30 p. m.

JOHN L. HARDING, *F. S. and R. S.*

Balboa, C. Z., October 22, 1910.

Steam Shovel Records on P. R. R. Relocation.

The performance of steam shovels on the Panama railroad relocated line during September, as compared with other months, was as follows:

MONTH.	Output.	Average No of shovels	No. of working days.	Output per shovel.	
				Per day.	Per month.
	Cu. Yds.			*Cu Yds.*	*Cu. Yds.*
January.	206,334	8.24	25	1,002	25,040
February	214,411	7.91	23	1,179	27,106
March...	234,571	7.31	26	1,234	32,089
April....	212,097	7.15	26	1,140	29,648
May....	212,135	7.88	25	1,077	26,921
June....	236,689	8.00	26	1 138	29,586
July....	197,069	7.44	25	1,060	26,488
August..	250,341	7.04	27	1,318	35,575
Sept....	194,371	5.62	25	1,281	34,585

The best records for September were made as follows:

SHOVEL NO.	Cubic Yards.		
	Earth.	Rock.	Total.
121..................	31,160	9,330	40,490
123..................	9,365	24,280	33,645
257..................	2,725	37,030	39,755

Gatun Dam Spillway.

The progress of concrete laying in the spillway of Gatun Dam during the wceek ending October 22 is shown in the following statement:

DATE.	Cubic Yards.		
	Concrete	Large rock.	Total.
October 17.............	254	10	264
October 18.............	284	10	294
October 19.............	244	12	256
October 20.............	268	....	268
October 21.............	308	....	308
October 22.............	330	....	330
Total...............	1,688	32	1.720
Previously reported...	....	....	98,846
Grand total..........	....	....	100,566

New Steamship Service Begun.

The steamer *Pennsylvania*, one of the two vessels which the Pacific Mail Steamship Company have transferred from its coast service to the fast freight service between San Francisco and the Isthmus, arrived at the port of Balboa on the first trip, under the new schedule on Friday, October 14, one day late. The steamer sails on its return trip on October 23.

The *Stanley Dollar*, one of the three vessels in the new services of the California-Atlantic Steamship Company, between San Francisco and Balboa, arrived in Panama Bay on Monday, October 17, also a little behind its schedule. The boats of this service make one stop en route, calling at San Pedro, the port of Los Angeles. The *Stanley Dollar* left San Francisco, October 1; the *Mackinaw*, which is provided with cold storage space, left there on October 15. and the *G. W. Fenwick* is scheduled to leave on October 31.

Clothing for District Prisoners.

District prisoners will be supplied with two-piece uniforms of khaki, in which to work, as soon as some cloth owned by the Zone Government can be made into clothing at the tailor shop in Culebra penitentiary. Heretofore, the district prisoners have been obliged to work in clothing worn by them when arrested, and the result has been that many men have lived in wet clothing day after day. The new uniforms will be used by the men while at work, and they will then be able to put on dry clothing after their return to the jails at night. District prisoners are short term men who are confined at the district jails and not sent to the penitentiary. The long term prisoners will continue to use striped suits while at work.

Ancon Rock Crusher.

A statement of the rock crushed at Ancon quarry in the weeks ending October 15, and 22, respectively, follows:

DATE.	Hours worked.	Cubic Yards.
October 9......................	8:10	3,345
October 10......................	8:05	3,405
October 11......................	7:15	2,575
October 12......................	7:45	3,375
October 13......................	7:05	2,550
October 14......................	7:25	2,540
October 15......................	6:45	2,300
Total......................	52:30	20,090

DATE.	Hours worked.	Cubic Yards.
October 17......................	7:15	2,420
October 18......................	7:40	2,625
October 19......................	7:55	2,120
October 20......................	7:45	2,845
October 21......................	7:10	2,200
October 22......................	6:25	1,975
Total......................	44:10	14,185

University Club Election.

At its annual election on the evening of October 15, the University Club of Panama chose the following officers for the ensuing year: President, T. C. Hinckley; vice-president, W. H. May; second vice-president, A. L. Robinson; secretary, J. E. Marsh; treasurer, A. E. Cornwell; board of governors, J. K. Baxter, W. G. Comber, F. B. Fearon, J. St.C.Hunt, O. E. Malsbury, C. C. Metcalf, A. C. Parke.

Edwin Warner, a Jamaican, check No. 102,393, an employe of the Atlantic Division at Gatun, was run over and instantly killed about 7 p. m., Tuesday, October 25, as the Gatun shuttle train was entering the yard at the Colon station. The accident occurred as he was alighting from the train.

Dr. S. T. Darling of the Ancon Hospital laboratory and J. J. McGuigan of the Panama Health Office left on Monday, October 24, for the province of Los Santos to investigate the reported appearance of smallpox in that section.

YEAR WITH THE CLUBHOUSES.

Field Enlarged During 1909-10, and a Material Gain in Membership Was Made.

During the fiscal year 1909-10, two new clubhouses, a large one at Gatun on March 5, and a smaller one at Porto Bello on April 12, were opened by the Isthmian Canal Commission, increasing the number of such buildings to six. The largest membership for any month of the fiscal year was 1,643 in June, 1910, and the smallest was 1,075 in November, 1909. The membership on June 30, 1910, was 1,222. About 2,479 different men availed themselves of the membership privilege, as compared with 2,140 during the preceding year. The gross receipts amounted to $64,973.12, an average of $5,414.42 a month, which was $615.56 a month greater than the year before, and $933.55 a month greater than two years ago. The net balance above estimated liabilities was $8,156.54, which was $6,987.11 greater than the net balance on June 30, 1909. Collections on account of dues alone aggregated $13,493. The total receipts of the refreshment counters were $25,025.54, a daily average of $68.67, and a gain over the year before of $2,795.14. These are operated as a convenience to members, and not as a source of profit, and are conducted on as close a margin as practicable.

The attendance was carefully estimated each month during the year, and on several occasions an actual count was taken for periods ranging from ten days to two weeks. As a result, the total attendance is placed at over 600,000, or about 100,000 more than during the fiscal year 1908-09.

The work of the year was carried out along practically the same lines as in the past, especial attention being paid to the physical and entertaining features. There was a monthly average of 184 different men using the gymnasiums during the year and 692 were enrolled in systematic gymnasium work, with a total of 10,475 in attendance, an increase of 3,304 over the preceding twelvemonth. Basketball and indoor baseball proved attractive features, and men were trained for participation in several outdoor athletic meets.

In the amusement field, local entertainments, given by the members themselves, were encouraged as far as practicable. These consisted of dramatic entertainments, minstrel shows, concerts, "smokers," debates and lectures. Several professional entertainers were brought to the Isthmus, and on three occasions during the year, the people of the Zone were given an opportunity, through the clubhouse management, of attending grand opera at the National Theatre in Panama. One hundred and ninety-four entertainments were held, with an attendance of over 38,000. In addition, 119 functions outside the association management were given in the clubhouses, with an attendance of nearly 17,000.

The clubhouse libraries were kept well supplied with the latest publications. The members availing themselves of this privilege averaged 602 monthly, and a total of 17,821 books were withdrawn. The reading rooms were well filled at leisure times, and on the correspondence tables, which occupy a space therein, 62,433 letters were written.

During the year there were 56,792 bowling games, a monthly average of 4,732, and 179,949 games of pool and billiards, a monthly average of 14,996. Seventy-six different tournaments were conducted in which 1,184 players were enrolled. The average monthly enrollment of chess and checker clubs was 46; glee clubs, 12; dramatic and minstrel clubs, 28; camera clubs, 80; Bible clubs, 50. In addition, 274 men were enrolled in educational classes, and 42 religious meetings were held, with a total attendance of about 4,000.

The boys' department proved a successful feature. The membership, which includes boys between the ages of 10 and 16, averaged 65, and the attendance averaged 47. Forty-two outings were planned and carried out for them during the year. The plan of admitting women to the privileges on two afternoons of each week, as well as to evening functions, was continued, and in this manner the entire community was served.

Although the clubhouses are not provided with regularly equipped dormitories, 3,300 beds, improvised from cots and mattresses, were furnished free of charge to members and guests during 1909-10. More than 1,600 hospital visits were paid and magazines and newspapers were distributed among the sick. There was a monthly average of 14 committees and 79 committeemen cooperating with the secretaries in conducting the work.

The advisory committee, representing the Commission's interests in the clubhouses, consists of Col. W. C. Gorgas, W. W. Warwick, Maj. H. A. Brown, chaplain, Joseph Bucklin Bishop and F. C. Freeman. Messrs. H. L. Stuntz and A. Bruce Minear, who were on the 1908-09 committee, resigned, and their places were filled by Maj. Brown and Mr. Freeman. In addition, executive councils are appointed for each clubhouse to cooperate with the local secretary in managing its affairs.

OCCUPANTS OF COMMISSION QUARTERS.

The number of occupants of Commission quarters in September was 23,711, of whom 9,025 were white Americans, 7,697 negroes, and 6,282 Europeans. By comparison with the statement of the labor force in September, published elsewhere in this issue, it will be seen that practically all of the American and European employes and their families are housed in Commission quarters, while only a small portion of the negro employes are so housed. The majority of the negroes prefer living in lodging houses in the various villages, or in small huts on the edge of the jungle. A statement showing the number of occupants in the various villages follows:

PLACE.	GOLD.			WEST INDIAN.			EUROPEAN.		
	Men	Women	Children	Men	Women	Children	Men	Women	Children
Balboa	242	86	113	152	20	30	269	23	31
Ancon	365	260	107	311	17	18	15	2	....
Corozal	174	59	77	113	3	2	124	2	3
Miraflores	15	2	....	208	11	12	417	3	2
Pedro Miguel	252	73	71	177	40	44	380	10	11
Paraiso	155	86	83	149	115	113	194	10	13
Culebra	384	220	195	433	144	150	488	48	56
Empire	577	309	264	297	116	156	190	51	91
Las Cascadas	226	104	117	190	115	115	233	47	47
Bas Obispo	83	32	35	141	48	55	247	34	34
Gorgona	753	194	212	310	104	144	184	16	15
Tabernilla*	134	54	86	409	57	67	579	5	10
Gatun	812	168	159	1,169	20	32	1,473	34	34
Cristobal	930	272	214‡	1,037	290	386	281	....	....
Porto Bello†	172	22	16	610	....	....	206	....	....
Toro Point	47	8	6	274	....	....	370	....	....
Total	5,321	1,949	1,755	‡5,980	1,100	1,324	5,650	285	347

Grand total, 23,711.

*Includes San Pablo and Bohio. †Includes Nombre de Dios. ‡Includes 58 Asiatics.

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the weeks ending October 15 and 22, respectively, follows:

DATE.	Hours worked.	Cubic Yards.
October 10	9:50	3,092
October 11	6:30	2,987
October 12	10:13	3,872
October 13	10:08	2 945
October 14	9:20	3,287
October 15	7:33	3,650
Total	53:34	19,833

DATE.	Hours worked.	Cubic yards.
October 17	10:52	3,228
October 18	9:21	3,703
October 19	6:51	2,835
October 20	9:17	2,872
October 21	7:41	2,614
October 22	10:05	2,253
Total	54:07	17,505

Revolver Match.

In the revolver match held at Culebra, October 1 to 9 inclusive, the results were as follows: First, a 38 calibre new army revolver, value $25, donated by a Panama hardware company, won by C. B. Larzelere, with a score of 407 out of a possible 500; second, a silver medal suitably inscribed, won by F. A. Browne, with a score of 391 out of a possible 500; third, a bronze medal suitably inscribed, won by T. E. L. Lipsey, with a score of 374 out of a possible 500. The other contestants made scores as follows: Wm. Hadley, with a score of 345 out of a possible 500; H. F. Tucker, with a score of 341 out of a possible 500; C. S. Boyd, with a score of 322 out of a possible 500.

Money Order Business.

The money order business in the Canal Zone post-offices for September, as compared with that of September in 1909 and 1908, was as follows:

	1910	1909	1908
Orders issued	17,973	16,331	14,822
Value	$466,127	$417,803	$429,990
Payable in U. S.	354,692	311,734	317,617
Payable in C. Z.	110,833	105,795	112,373

LOST—At the National Theatre, Panama, or between the Panama railroad station and theatre on October 14, a crescent pin of pearls and enamel. Finder please return to Y. M. C. A. secretary, Empire, and receive reward.

COLON BREAKWATER.

Village at Toro Point and the Work in Progress There.

The double trestle at Toro Point, from which the rock fill is made for the new breakwater in Colon harbor, is being built seaward at the rate of three bents, or about 40 feet each working day, and now extends about 1,600 feet from the shore. The trestle leaves the mainland just inside the point, only a few yards from the lighthouse and extends in a northeasterly direction. Two piledrivers are employed at present, one working on each track, but these will be replaced shortly by a new machine ordered especially for the breakwater work. The parts for the piledriver, which will be the largest in the Commission service, have been received but not yet assembled. The body part will be 45 feet long, and the machine will be able to handle piles 100 feet in length, driving them anywhere within a radius of 28 feet off center.

The trestle has been filled in with material from the quarry for a distance of about 600 feet, and partly filled in for about 850 feet farther. In this work four locomotives of the French type and 24 Western dump cars are used, each train consisting of from five to six cars. About 50 more cars will be added to the motive equipment within a short time. The French locomotives are able to haul ten full cars each, as the grade of the track running up on the breakwater trestle is very slight. The trestle has reached a point where the water is 37 feet deep and only 80-foot piles or longer can be used. From here to the end of the breakwater, between 8,000 and 9,000 feet, the depth of the water varies from 37 to 44 feet. So far only hard bottom has been encountered, and there has been but little subsidence and practically no wash of the material after it has been placed. From 1,800 to 2,000 cubic yards of material mostly rock, are dumped from the trestle each working day, the output being supplied by two 70-ton steam shovels, working at quarry No. 1.

Two more steam shovels will probably be added to the excavating equipment later on. There are two quarries available, but only one has been worked to date, although the second has been blasted and can be opened at any time. The rock mass is broken up in large boulders and is transported to the breakwater in sizes as large as can be loaded on the cars. The rock is of a soft variety, but does not decompose in sea water. Explorations farther inland from the quarry site have been and are being made with a view to ascertaining if harder rock can be obtained. About 500 men are now employed on the breakwater construction. In addition, about 160 men are working on the reservoir. The piledriving and clearing gangs are composed principally of West Indians, but Spaniards are employed at the quarry and other forms of labor about the camp.

All the buildings called for in the original plans for the Toro Point settlement are practically completed. The last of these, a combination storehouse and office building, and a machine shop and engine shed, are erected but not occupied. The superintendent of the works has been using rooms temporarily in building No. 4, bachelor quarters, for office purposes, but will be able to move in a few days. The new office is divided into three rooms, one for the superintendent's use, one for drafting purposes, and a third for the timekeeping force. The new telephone exchange will also be located in this building. The engine house and machine shop occupies a site near the end of the point. None of the machinery has yet been installed, but most of it is on the ground. In one corner will be an office and tool room 10 by 15 feet in size, and the rest of the space will be utilized by the engine and boilers, and the plant machinery, consisting of a shaper, drill, planer, blower, and all the equipment necessary to do ordinary repairs, the most of which was taken from stock already on the Isthmus. Two boilers, type not yet known, will furnish steam for driving the machinery mentioned above, and also for operating a 50-kilowatt generator for supplying the settlement with electric lights.

Nearly all the safeguards and conveniences found in the settlements of the Zone have been or will be duplicated at Toro Point. A large number of ditches and drains have been dug and low places oiled. The sick rate of the camp has shown a steady diminution. On October 22, only two of the 67 white employes were in the hospital, and one of the cases was the result of an accident. The quarters all skirt the beach, face the east, and occupy fully as favorable a location in respect to ocean breezes as the quarters on Roosevelt avenue, Cristobal, while the rainfall is believed to be less than across the bay, although no accurate observations have yet been made. The stretch of beach in front of the quarters is being leveled to prevent water from collecting in low spots, and when the work is completed there will be an excellent palm walk. The road to reach the American quarters, and those of the silver laborers beyond, will be laid off behind them, instead of in front. Half a mile or more south along the shore is a bathing beach, equal, if not superior to any found near the Canal Zone. It is reached from the settlement by a path which winds among the cocoanut palms all the way. On Sundays, from 50 to 75 people from Cristobal and towns in the Zone visit Toro Point and the bathing beach, one of the Atlantic Division clapets awaiting the morning train from Panama on that day to carry passengers over. On week days, the clapet leaves dock No. 13 at 6.30 a. m., or as soon thereafter as possible, and in the afternoons of week days and Sundays at 4.30 o'clock, returning at 5.30. The District Quartermaster's launch also makes a trip daily, leaving dock No. 11 at 9.30 a. m.

Work is still in progress on the 50,000,000 gallon reservoir on the Sweetwater River, which is to furnish the breakwater camp with a reserve water supply. The construction is well advanced and will probably be completed in time to impound sufficient water to last the settlement through the dry season. Water is at present piped to the camp direct from the headwaters of the river, and the gauge reading, except when the engines are taking water, shows from 70 to 80 pounds pressure.

STATEMENT OF CLASSIFIED EXPENDITURES TO AUGUST 31, 1910.

	Department of Civil Administration.	Department of Sanitation.	Department of Construction and Engineering.	General Items.	Total.
Total to June 30, 1910..	$3,427,090.29	$9,673,539.28	$69,622,561.42	$78,022,606.10	$160,745,797.09
Total, fiscal year 1910..	709,351.37	1,803,040.95	26,300,167.05	2,863,088.83	31,675,648.20
July, 1910.............	58,474.88	156,006.64	2,216,849.78	280,015.85	2,711,347.15
August, 1910..........	63,887.05	164,220.65	2,348,777.07	336,961.35	2,913,846.12
Total...............	$4,258,803.59	$11,796,807.52	$100,488,355.32	$81,502,672.13	$198,046,638.56

PERSONAL.

Col. Geo. W. Goethals sailed from New Orleans on October 22 on the United Fruit Company's ship scheduled to arrive at Colon on October 27.

Spanish War and Philippine Veterans.

All veterans of the Spanish and Philippine campaigns residing in the Canal Zone are requested to send their names and addresses to John H. Lloyd, member of the Richard J. Hardin Camp, Washington, D. C., at Gatun. It is proposed to organize a camp of the Spanish War Veterans' Association in the Canal Zone, and all those eligible for membership are invited to cooperate to this end.

A school for white children will be opened at Bas Obispo as soon as repairs to building No. 54 in that village can be completed. One teacher will be employed and there will be about 20 children in attendance.

Contract for Clearing Trails.

MOUNT HOPE C.Z., October 25, 1910.

Bids will be received at the office of the Purchasing Agent on the Isthmus, Isthmian Canal Commission, Mount Hope, C. Z. up to 2.30 p. m., Monday, November 14, 1910, at which time they will be opened in public, for clearing the Arraijan-Rio Grande trail from the Canal Zone boundary to a point on the Panama railroad, 600 feet below the Rio Grande dam, a distance of about seven (7) miles; and for clearing the Arraijan-Paraiso trail from the Canal Zone boundary line to the Panama railroad, a distance of about six (6) miles; and also for clearing the Arraijan-Cochinito trail from the Canal Zone boundary line, south of Arraijan, to the village of Cochinito, in the Canal Zone. The work shall be done in accordance with specifications to be had upon application to the Superintendent of Public Works, I. C. C., Administration Building, Panama. Proposals may be made for the clearing of each trail separately, or for the three. The successful bidder will be required to furnish bond or cash deposit in the amount of $25 for each trail as a guarantee that the work will be carried out. Proposals should be enclosed in sealed envelopes, marked "Proposals for clearing Arraijan-Rio Grande, Arraijan-Paraiso and Arraijan-Cochinito trails." The Commission reserves the right to reject any and all bids, to accept any bid as may be deemed to its interest, and to waive defects and informalities in proposals.

CHARLES L. PARKER,
Purchasing Agent on the Isthmus.

Proposal for 86,000 Feet Guayacan (Lignum Vitae) Lumber.

MOUNT HOPE, C. Z., October 15, 1910.

Sealed proposals will be received at the office of the Purchasing Agent on the Isthmus, Mount Hope, C. Z., until 2 o'clock p. m., November 2, 1910, at which time they will be opened in public, for furnishing 32,000 feet, board measure, of guayacan lumber, of sizes 6"x6", 6"x8", 6"x10", and 6"x12", in 8-foot lengths, and 54,000 feet, board measure, of guayacan lumber, sizes 6"x6", 6"x8", 6"x10", and 6"x12", in 10-foot lengths. Bidders will be required to indicate time necessary for delivery of material, and submit sample of same. Delivery will be accepted on board cars at any point along the Panama railroad. The right is reserved to reject any or all bids. Bids should be addressed to Charles L. Parker, Purchasing Agent on the Isthmus, Mount Hope, C. Z.

Public Sale of Carpenter's Tools, Etc.

There will be sold at public auction, at the Quartermaster's Depot at Mount Hope, at 2 p. m., October 29, 1910, a full line of carpenter's tools, such as awls, bits, chisels, gimlets, mortise gauges, draw knives, planes, saws, shaves, squares; also items of beds, chalk, surrey, corn knives, etc. Purchasers will be required to pay in cash before removal of articles, and all articles sold must be removed within 48 hours from date of sale. These articles may be seen on any week day upon application at the office of the Depot Quartermaster. Catalogue will be furnished upon request. The right is reserved to reject any or all bids.

CHARLES L. PARKER,
Acting Depot Quartermaster.

SOCIAL LIFE OF THE ZONE.

Women's Clubs and Other Features.

The meeting of the Paraiso Woman's Club was held in the lodge hall on Wednesday afternoon, October 19, when reports of the delegates to the Gorgona convention, and papers on current events were read. Arrangements for the benefit dance to be held on Saturday evening, October 29, are about completed. There will be special trains from Gorgona and Balboa. The hall will be decorated with the club colors, and the club flag, bearing the name of the organization, will be used for the first time. The music will be furnished by the Tivoli orchestra.

Much of the interest manifested in this dance is due to the cause for which it is given—the establishment of a playground for the American children of the village. Paraiso has over thirty white children of school age and under, and the need of some provision for their diversion is felt. To this end, a tentative movement has been started in the Woman's club to organize the boys under a captain for sports and scout activities. They will be formed into a regular club and will hold meetings under the supervision of one of the club women. A similar organization for the girls is projected, which will include sewing classes and possibly gymnastics.

The meeting of the club on November 2, will be "cup and saucer day," each member presenting a cup and saucer, and tea will be served thereafter at the close of each business meeting. The Christmas bazaar will be held the third week in December.

The Pedro Miguel Woman's Club held a social meeting at the home of Mrs. L. M. Vacher, Paraiso, on Wednesday afternoon, October 19. The club presented the hostess with a gold embroidered pillow top.

The meetings of the Empire club have been suspended for three weeks owing to the illness of the president and the absence from the Isthmus of the vice-president.

The annual Christmas bazaar of the Cristobal Woman's Club will be held in the Commission clubhouse on Wednesday afternoon, November 30. There will be a sale of fancy work, cakes and sweets. A Japanese tea room, and a toy booth will be special features. As a result of the bazaar last year, the Cristobal club was able to expend the sum of over $100 toward the Christmas entertainments in Colon and Cristobal.

As a result of the recent performance given by the Ancon Dramatic Club at the National Theatre, Panama, the sum of $228 has been donated to the Canal Zone Humane Society.

The friends of Chaplain and Mrs. Brown are invited to attend a reception given to them by the Woman's Guild of Trinity Church, at the Commission clubhouse in Culebra, at 8.15 o'clock on Tuesday night, November 1.

Church Notices.

The annual meeting of the Woman's Guild of St. Luke's Church, Ancon, will be held at the residence of Mrs. W. C. Gorgas on November 1. This will also be the seventieth meeting of the organization, and will mark the closing of the third year of its existence. An election of officers for the ensuing year will be held. The day will be further observed by a special service in St. Luke's Church at 9 a. m., at which time the corporate communion of the Guild will be made. The church will be suitably decorated and memorial hymns will be sung.

At a recent evening "social" held by the Woman's Foreign Missionary Society of the Methodist church, Panama, the proceeds amounted to approximately $75. A part of this money will be used to complete the payment on the scholarship in the Methodist college maintained by the society, ten dollars will be donated to the Christmas entertainment, and the remainder will be kept in the treasury to form the nucleus of a working fund or missionary purposes.

Notice to Red Cross Members.

The general secretary of the American National Red Cross has requested the Canal Zone Chapter to elect delegates to represent that organization at the general annual meeting to be held in Washington, D. C., on the first Tuesday after the first Monday in December. Members of the chapter who are expecting to be in the States on annual leave at that time and who could conveniently arrange to be present at the meeting, are requested to send their names to the chairman of the chapter, Lieut-Col. C. A. Devol at Culebra, as soon as possible in order that a selection may be made. Section 25 of the rules and regulations for branch societies provides that delegates to the annual meeting may be either elected, or designated by the chapter chairman.

During the absence on annual leave of the treasurer, Lieut.-Col. John L. Phillips, the business of the treasury will be conducted by the chairman of the chapter, and communications regarding the same should be addressed to him at Culebra.

Preliminary to arranging for the annual meeting, a meeting of delegates from the local districts will be held in the office of the District Quartermaster, Ancon, on Sunday afternoon, October 30, at 3 o'clock. These delegates will place in nomination candidates for office for the ensuing year.

Dance at Corozal.

A dance will be given by the young men of Corozal at the recreation hall on the night of November 2. A special train will be run leaving Ancon at 7.30 p. m.; Balboa, 8.40; Paraiso, 8.10; and Pedro Miguel, 8.20. Returning, the train will leave Corozal at 12, midnight.

Masonic Banquet at Colon.

A banquet of Masons for the Masons residing on the Isthmus was held at the Washington Hotel, Colon, on Saturday night, October 15. Two hundred and forty members of the craft were present, a special train bringing the guests from Panama and the villages in the Canal Zone, returning at 1.15 a. m. The dining room was appropriately decorated in honor of the event, and music was furnished by an orchestra. William H. Decker officiated as toastmaster.

Ancon Club Declared Winner.

A decision in favor of the Ancon Athletic Club has been rendered by the Amateur Athletic Union on the question of the relay race at the Y. M. C. A. field meet held at Empire on Labor Day. The race was won by Ancon under protest. This decision makes the Ancon club winner of the meet, and the trophy shield will therefore be presented to that club as soon as it is received from the States.

OFFICIAL CIRCULARS.

Transfer of Rolling Stock.

CULEBRA, C. Z., October 19, 1910.

CIRCULAR No. 356:

When rolling stock is transferred from the Panama Railroad Company to the Isthmian Canal Commission, the Panama Railroad Company will obtain memorandum receipt from the department or division using the equipment, and will make a monthly report to the Chief Quartermaster showing equipment loaned to the Commission and in whose service.

The department or division of the Commission using such equipment will also make monthly reports to the Chief Quartermaster, these reports to be used as a check against the record of the railroad company.

The Chief Quartermaster will have this record available at all times in order that equipment can be readily located.

H. F. HODGES,
Acting Chairman, Isthmian Canal Commission.
Second Vice-President, Panama Railroad Company.

Board of Local Inspectors.

CULEBRA, C. Z., October 18, 1910.

Mr. C. J. Anderson,
Dry Dock,
Cristobal, C. Z.

Sir:

Under authority conferred upon me by Executive Order of the President No. 1131, dated October 2, 1909, you are hereby appointed a member of the Board of Local Inspectors, for the performance of the duties prescribed therein.

Respectfully,
H. F. HODGES, *Acting Chairman*

Sale of Public Buildings.

CULEBRA, C. Z., October 17, 1910.

Sealed proposals for the purchase of the following Isthmian Canal Commission buildings located in the Santa Cruz-Las Cascadas-Bas Obispo district will be received at this office until 3 p. m., Saturday, October 29, 1910, and then opened:

203 Storeroom, Central Division.
240 Laborers' barrack.
205 Storeroom, Quartermaster's Department.
206 Laborers' barrack.
207 Range closet.
208 Laborers' barrack.
209 Laborers' barrack.
210 Rest house.
211 Range closet.
212 Laborers' barrack.
213 Laborers' barrack.
214 Range closet.
215 Laborers' barrack.
216 Laborers' barrack.
217 Storeroom, Quartermaster's Department.
218 Gold married quarters.
219 Storeroom, Subsistence Department.
221 Silver married quarters.
222 Silver married quarters.
223 Silver married quarters.
224 Bath and closet.
225 Gold bachelor quarters.
226 Silver married quarters.
227 Gold bachelor quarters.
228 Silver married quarters.
229 Laborers' barrack.
230 Laborers' barrack.
231 Laborers' barrack.
232 Gold married quarters.
233 Laborers' barrack.
234 Gold married quarters.
235 Laborers' barrack.
236 Silver married quarters.
237 Laborers' barrack.
238 Laborers' barrack.
239 Laborers' barrack.

Proposals will be received for each building or for the entire number. A deposit of fifty dollars ($50) U. S. currency will be required to accompany each bid.

The successful bidder to make payment in full upon receipt of award. Buildings to be removed by the successful bidder within a period of ninety (90) days from date of award. Proposals will be expressed in U. S. currency.

Proposals will be mailed in a sealed envelope marked on such envelope "Proposals for the purchase of Isthmian Canal Commission buildings, located at Santa Cruz, to be opened at 3 p. m., Saturday, October 29, 1910," and addressed to the Chief Quartermaster, Isthmian Canal Commission, Culebra, C. Z.

The Government reserves the right to accept or reject any or all bids or any part thereof.

For further information apply to the District Quartermaster, Las Cascadas; the Assistant District Quartermaster, Bas Obispo, or to this office.

C. A. DEVOL, *Chief Quartermaster.*

The following vessels arrived at and departed from the port of Balboa during the week ending October 15:

Arrivals—October 9, *Ecuador*, from Guayaquil; October 10, *San José*, from San Francisco; October 14, *Ucayali*, and *Limari*, from south ports; *Pennsylvania*, from San Francisco.

Departures—October 9, *Chile*, to south ports; *Marian*, to intermediate ports; October 12, *Peru*, to San Francisco; October 13, *Hornelen*, to Puget Sound; October 14, *U. S. S. Vicksburg* to north ports.

COMMISSION CLUBHOUSES

Activities of the Young Men's Christian Association.

CULEBRA.

The standing in the chess tournament is as follows:

	Won.	Lost.
Bartlett	4	7
Dubois	10	2
Goodenow	5	7
Mengel	2	10
Putnam	4	8
Stiles	5	5
Warner	9	1

The discussion club met on Wednesday evening; subject, "Climate and Diet," under the leadership of Mr. Kramer. Mr. Smith of Gatun will have charge of the next meeting; his subject will be, "Fellowship." The discussions will be extended four weeks due to the interest shown.

An informal social was held at the clubhouse on Wednesday evening. The program was as follows: Piano duet, Mrs. Carlson and Mr. Howard; reading, Mrs. Kirpatric; violin solo, Mr. Talty; mixed quartet, Mrs. Jacobs, Miss Lee, Messrs. Case and Kramer; reading, Mr. Kearns of Cristobal; cornet solo, Mr. Schildhauer; reading, Mr. Kearns. After the program was over, refreshments were served, after which every one joined in singing.

The duckpin tournament will open on the first of December. The alleys are open now for those who desire to get ready for the tournament. Men desiring to enter should leave their names at the desk or see Mr. Dougherty, who is in charge of the alleys.

The billiard tournament will open early next month.

The bowling match between the second teams of the Empire and Culebra associations resulted in Empire taking two out of three games. Following are the scores:

Culebra.				Empire			
Fleischman	180	134	123	Gustavson	142	172	176
Hayes	139	142	179	Nicodemus	124	181	171
Huttle	160	123	168	Goldsmith	138	135	165
R. Koperski	123	135	....	Giavelli	150	199	159
Mengle	153	112	160	Bardelson	175	159	153
Baumer			149				
Total	755	646	779	Total	729	846	824

EMPIRE.

The Empire Musical and Dramatic Society will give an entertainment at Gorgona on October 26, at Culebra, on the 28th, and at Gatun on November 3.

At the meeting of the discussion club led by Mr. Freeman on October 26, the topic was "Leadership."

The regular meeting of the literary and debating society will be held on October 28. An interesting program is being prepared by the committee.

The Cristobal basketball team plays the Empire team at Empire on Saturday night, October 29.

GORGONA.

The discussion club was led by J. D. Safford last week and his subject, "Leadership," was generally discussed.

The opening of the Isthmian Basketball League occurred on Saturday night. Empire took a well played game from the Gorgona five. The line-up was as follows:

Empire.	Position.	Gorgona.
Eason	Forward	Ridge
King	Forward	Hodson
Bartholomew, Capt	Center	Strippling
McCollum	Guard	Calvitt, Capt.
Seaton	Guard	Foster

Summary: Empire, 34; Gorgona, 17. Goals by Bartholomew 9; King, 3; McCollum, 4; Strippling, 3; Ridge, 2. Foul goals by Bartholomew, 2; Strippling, 4; Ridge, 1; Hodson, 2. Referee, Christopherson. Umpire, Charnley. Scorer, Clements. Timer, Warr. Time of halves, 20 minutes. Basketball practice nights are Monday and Thursday at 8 o'clock. All men are invited to come out and try for the team and help Gorgona win.

The bowling scores of 200, or over, for the week follow: Misal, 200, 208; Halderman, 202; White, 224; Bordt, 203; McConaughey, 200.

The second team took two out of three games from the Cristobal second team on Saturday night. Scores:

Gorgona.				Cristobal.			
Stoehr	126	156	121	Barrett	121	157	161
Misal	129	119	108	Blackburn	141	140	155
Frances	149	143	162	Hess	149	133	119
Varenkamp	159	161	178	Adams	121	160	159
Bordt	158	186	135	Weston	178	161	191
Total	721	765	704	Total	710	751	785

Next Saturday the Empire first team rolls the Gorgona first team.

Sunday, October 29, is the regular Sunday song service night. All are urged to come. There will be an address and special music.

GATUN.

The program at the "social" and smoker held at the clubhouse on Thursday, October 20, included a sketch by the Empire Stock Company entitled "The Hypnotist," tenor solo by Samuel Perkins, sleight-of-hand work by R. Prados, comic duet by Messrs. King and Cullen, and a sketch by F. B. Young, followed by songs in which Mr. Young was assisted by a male chorus.

C. C. Carr, principal of the high school, led the discussion club meeting on Friday night; subject, "The College Man." The meeting this week will be led by J. Dwight Safford of the Camp Elliott Y. M. C. A.; subject, "Leadership."

The Empire Musical and Dramatic Club will give an entertainment on the night of November 3, presenting the program published in THE CANAL RECORD of October 12.

A class in Spanish is in process of organization and any member of the Y. M. C. A. is eligible for membership.

A duckpin tournament will be held during the month of November.

Louis DePoorter wishes to meet any man on the Isthmus for the pool championship of the Isthmus.

Archie O. Ludwig, the new physical director, was introduced to the members at the smoker held on the night of October 20.

CRISTOBAL.

Tuesday night the Cristobal council met and planned some changes in the association building as well as an extension of the work.

The first and second basketball teams had a lively game Thursday night, the first team winning. At a meeting of the first team, J. H. Weller was elected captain for the Isthmian Interassociation Basketball League.

The Empire Musical and Dramatic Society gave an enjoyable entertainment at the clubhouse on Friday night, October 21. The program published in THE CANAL RECORD of October 12 was carried out.

The bowling game Saturday night between the first teams of Gorgona and Cristobal resulted in the latter winning all three games. The scores were:

Gorgona.				Cristobal.			
Roper	158	156	192	Bullard	185	182	168
Stewart	96	170	107	Rabbitt	134	164	146
White	133	182	172	Collins	192	157	176
Halderman	142	151	131	Burns, T.	127	178	204
Otis	150	173	160	Thomas	165	160	162
Total	679	832	762	Total	803	841	856

Cristobal has risen from last to third place in the past two weeks, Empire and Gatun only leading.

Dr. Claude C. Pierce will conduct the discussion club this week with the subject of "Shall We Be Vaccinated?" All are invited to attend and take part.

The Cristobal Y. M. C. A. pressing club was authorized by the executive council last week and will be started on November 1. Tickets entitling the holder to have four suits pressed a month will be sold for $1.50. These must be purchased in advance and no work will be done unless a ticket is held. Single suits will be cared for at the rate of 75 cents, or two suits for $1.

The Canal Zone clubhouses gave an outing for the boys' department on Saturday, October 22. Sixty boys were taken to Toro Point and under the care of the physical directors enjoyed the day swimming, playing games, and rambling among the cocoanut trees.

At the basketball league game on Saturday night between Cristobal and Culebra, the score for the first half was 31 to 18 in favor of Cristobal, and in the second half the score was 22 to 12 in Cristobal's favor. Total Cristobal 53, Culebra, 30. The line-up was as follows:

Culebra.	Position.	Cristobal.
Cushing	Forward	Sartor
Purchase	Forward	Prather
Vifquain	Center	Vifquain
Case	Guard	Luce
Koperski	Guard	Weller, Capt.

Summary: Goals, Cushing; Purchase, 2; Vifquain, 5; Koperski, 1; Sartor, 6; Prather, 3; Vifquain, 6. Goals from fouls, Prather, 3. Fouls, Cushing, 3; Purchase, 2; Vifquain, 1; Koperski, 1; Prather, 2; Luce, 2.

STATISTICAL REPORT FOR SEPTEMBER.

Total membership	1,895
Total number of bowling games	6,877
Number different tournaments	11
Total number tournament players	212
Total number pool and billiard games	16,704
Total income from soda fountains	$2,822.39
Number different men using gymnasiums	223
Total attendance of men using gymnasiums	1,272
Number enrolled in chess and checker clubs	68
Number enrolled in glee clubs	19
Number enrolled in dramatic and minstrel clubs	44
Number enrolled in camera clubs	23
Number enrolled in Bible or discussion clubs	282
Number of members of libraries	732
Total number of books withdrawn	2,009
Number of lectures	3
Attendance	380
Number of imported entertainments	13
Attendance	3,024
Number of local entertainments	11
Attendance	1,960
Number functions outside association management	7
Attendance	710
Number afternoons for women	37
Attendance	313
Number evening functions to which women invited	31
Attendance	2,244
Number different men on committees	192
Number of men called on in hospitals	164
Number of letters written at public tables	4,921
Total attendance at buildings	69,397
Average attendance per day	2,300
Number of beds used during the month	434
BOYS' DEPARTMENT.	
Number of members	78
Number of afternoons for boys	74
Average attendance per afternoon	48
Total attendance in systematic gymnasium work	676
Outings and other special features	2

Rainfall from October 1 to 22, Inclusive.

MIDNIGHT TO MIDNIGHT.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	1.98	10	6.67
Balboa	1.77	10	7.84
Miraflores	2.06	22	9.23
Pedro Miguel	1.85	22	8.87
Rio Grande	2.93	18	9.50
Central Section—			
Culebra	2.88	18	8.72
Camacho	3.10	18	9.05
Empire	1.99	18	7.55
Gamboa	2.19	10	9.27
Alhajuela	2.72	20	12.29
El Vigia	2.65	21	12.02
Gorgona	2.30	10	9.28
San Pablo	2.79	19	10.79
Tabernilla	2.56	20	10.30
Bohio	2.92	20	11.00
Monte Lirio	5.39	20	11.61
Atlantic Section—			
Gatun	1.75	5	10.03
Brazos Brook	3.36	20	7.82
Cristobal	3.85	19	10.37
Porto Bello	1.20	5	*4.78
Nombre de Dios	1.02	20	2.45

*To 5 p. m., October 21.

Misdirected Letters.

Ancon, C. Z., October 26, 1910.

The following insufficiently addressed letters originating in the United States and its possessions have been received in the office of the Director of Posts and may be secured upon request of the addressee:

LETTERS UNCALLED FOR OCTOBER 19, 1910.

Abramson, John (pkg.)
Blunt, William T.
Cane, Edward J., Jr.
Cannon, Mrs. P. J.
Cash, John H.
Connelly, John Edward
Cooper, Emmit
Cornell, Charles
Cressey, Fred
Dickinson, Mrs. Thomas
Doyle, Mrs. Rosa
Duer, George
Durfee, Oscar S.
Freelove, Mrs. Charles
Futardo, J. P.
Golden, J. P.
Goodloe, George W.
Holstein, O. A.
Kelly, M. A.
Kelly, Harold Stanford
Maloney, Martin
McCoin, L. C.
Macdonald, Mrs. D. B.
McEvers, E. H.
Miller, Frank
Neindorff, F. R.
Richards, Mrs. Ella
Rittenhouse, Charles E.
Root, John
Russel, Frank
Waldron, James E.
Winford, B.

LETTERS UNCALLED FOR OCTOBER 26, 1910.

Bowlen, Morris Edward
Burroughs, Hugh M.
Campbell, Geo. M.
Chesbro, Claud L.
Cox, William
Earle, J. Clarence
Fletcher, R. S.
Glazer, Harry
Graves, Mrs. H. S.
Hadsden, Wilfred
Halleck, H. G.
Hartsough, Tom
Holstein, O. A.
Hull, John B.
Jones, Howell
Kaufmann, R. H.
Lingle, G. L.
McGowan, Mrs. Lena
Oates, Mrs. Octavia
Pflueger, Mrs. Helen B.
Russell, Mrs. F. D.
Stevens, Miss Margaret
Tabor, Miss L. A.

The following vessels arrived at and departed from the port of Balboa during the week ending October 22:

Arrivals—October 16, *Peru*, from south ports; *Rupanco* from south ports; October 17, *Stanley Dollar*, from San Francisco; October 19, *Arica*, from Guayaquil; October 22, *Pectan*, from Port Harford.

Departures—October 15, *Ecuador*, to Guayaquil; October 17, *Ucayali*, to south ports; October 18, *San José*, to San Francisco; October 19, *Limari*, to south ports; October 22, *Pennsylvania*, to San Francisco.

COMMISSARY DEPARTMENT.

Thanksgiving Fruit Cakes.

CRISTOBAL, C. Z., October, 22, 1910.

Fruit cakes for Thanksgiving are now ready for delivery, and orders for the same at $1 each will be taken.

EUGENE T. WILSON,
Subsistence Officer.

Retail prices of cold storage provisions for the week beginning October 26.

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	7
Shoulder, neck trimmed off, (4 lbs. and over), per pound	10
Entire forequarters (not trimmed) 10 pounds and over, per pound	9
Legs, (8 to 10 pounds), per pound	19
Cutlets, per pound	20
Short cut chops, per pound	22
Lamb—Stewing, per pound	7
Entire forequarters, neck trimmed off, per pound	10
Legs (5 to 8 pounds), per pound	24
Chops, per pound	26
Cutlets, per pound	26
Veal—Stewing, per pound	10
Shoulder for roasting (not under 4 pounds), per pound	15
Loin for roasting, per pound	19
Chops, per pound	22
Cutlets, per pound	26
Pork cuts, per pound	22
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	9
Corned, per pound	12, 14, 16
Chuck roast, (3 pounds and over), per pound	13
Pot roast, per pound	15
Rib-roast, second cut (not under 3½ pounds), per pound	18
Rib roast, first cut (not under 3 pounds), per pound	20
Sirloin roast, per pound	21
Rump roast, per pound	21
Porterhouse roast, per pound	21
Steak, Chuck, per pound	14
Round, per pound	15
Rib, per pound	20
Sirloin, per pound	21
Porterhouse, per pound	21
Rump, per pound	21
Tenderloin, per pound	24

MISCELLANEOUS.

Livers—Beef, per pound	10
Calf, each	60
Half, each	30
Sausage—Pork, per pound	17
Bologna, per pound	14
Frankfurter, per pound	14
Leberwurst, per pound	14
Sweet bread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	†33
Eggs, fresh, ½ dozen only	†19
Bluefish, fresh, per pound	16
Cod, fresh, per pound	10
Halibut, fresh, per pound	13

POULTRY AND GAME.

Chickens—Fancy Roasting, large, each	1.50
medium, each	1.30
Fowls, each	70, 82, 93, 1.04, 1.15
Ducks, large, each	1.50
medium, each	1.30
Broilers, each	75
Turkeys, per pound	30
Squabs, each	35
Capons, each	2.50
Geese, fatted, each	2.60
Pheasants, each	70, 1.00
Partridges, each	50
Grouse, each	85

CURED AND PICKLED MEATS.

Ham—English York Cut, per pound	30
German, Westphalia, per pound	36
Sugar cured, per pound	22
Sugar cured, sliced, per pound	25
Half, for boiling, per pound	23
Boiled, per pound	28
Hocks, per pound	‡8
Bacon—Breakfast, whole piece, per pound	30
Breakfast, sliced, per pound	31
Beef, salt, family, per pound	10½
Pork, salt, family, per pound	15
Ox tongues, each	80
Pigs' feet, per pound	10
tongues, per pound	16
Mutton, mess, per pound	7

DAIRY PRODUCTS.

	Price.
Butter—Creamery special, per pound	40
Cheese—Roquefort, per pound	38
Philadelphia Cream, cake	10
Young America, per pound	22
Swiss, per pound	26
Edam, each	1.00
Camembert, in 2-pound tins, tin	38
Camembert, in ½-pound tins, tin	14
Neufchatel, each	6
Gouda, per pound	34
Parmesan, per pound	35
Milk, Briarcliff, bottle	**25
Buttermilk, bottle	**15

VEGETABLES AND FRUITS.

Beets, per pound	3
Celery, per head	6
Carrots, per pound	3½
Cabbage, per pound	3
Cucumbers, per pound	5
Cauliflower, per pound	10
Lettuce, per head	5, 7, 10
Onions, per pound	3
Potatoes, white, per pound	3½
sweet, per pound	2½
Squash, per pound	4
Tomatoes, per pound	6
Turnips, per pound	3
Yams, per pound	3½
Apples, per pound	5
Grapes, per pound	10, 14
Grape fruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12

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*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from Commissaries; no orders taken for delivery.

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal and Colon during the weeks ending October 15, and 22, 1910:

Atrato, October 9, from New York, with 1[illegible] pieces plate frogs, 57 pieces steel angles, 15 casks zinc for stock; 226 pieces steel angles for Mechanical Division.

Massachusetts, October 10, from New York, with 27,550 barrels cement for Atlantic Division; 113,800 bags cement for Pacific Division.

Luchana, October 11, from Jacksonville, with 3,213 pieces piling for stock.

Allianca, October 11, from New York, with 21 barrels sea coal facing, 953 pieces pipe, 12 cases calcium carbide, 47 cases air brake material, 10 barrels compound, 294 pieces pine lumber, 43 bars steel, 120 coils hose, 245 kegs bolts and rivets, 100 rolls roofing paper, 174 reels wire rope, 19 cases brass and copper tubes, 13 bundles peavies, 32 cases toe calks for stock; 48 car wheels, 10 pieces machinery for Pacific Division; 250 cases glassware for Sanitary Department; 569 pieces castings, 124 pieces steel, 24 cases incandescent lamps, 244 barrels fire brick for Mechanical Division; 38 pieces castings, 22 pieces cable chain for Central Division; and a miscellaneous cargo, the whole consisting of 4,350 packages, weighing 445 tons.

Abangarez, October 13, from New Orleans, with 142 crates fire brick, 869 pieces lumber, 50 cases switches, 51 packages cant hooks for stock; 33 pieces lumber for Mechanical Division; 390 tons dump car parts for Cristobal shops (for erection).

Otto Sverdrup, October 13, from Norfolk, with 50 drums paint for stock.

Metapan, October 14, from New York, with 23 cases ledger paper, 25 bundles strawboard, 394 drums engine oil for stock; 1 pile driver, 22 packages castings, 48 bales dredging sleeves for Atlantic division.

Colon, October 17, from New York, with 95 pieces steel, 155 cases soap, 30 cases tackle blocks, 44 cases steel, 110 kegs rivets, 27 barrels valves and fittings. 15 cases valves and fittings, 100 cases soap powder, 300 cases toilet paper, 49 cases babbit metal, 17 cases tools, 306 packages switch parts for stock; 12 crates dredge parts for Pacific Division; 18 cases drugs for Sanitary Department; 200 pieces car couplers, 28 pieces cable chains, 16 barrels crucibles for Mechanical Division; 18 barrels rubber hose, 7 cases rubber hose for Atlantic Division; and a miscellaneous cargo, the whole consisting of 1,730 packages, weighing 273 tons.

Prinz Joachim, October 17, from New York, with 7 cases ledger paper for stock.

Ancon, October 20, from New York, with 25,350 barrels cement for Atlantic Division; 101,400 bags cement for Pacific Division; 105 drums paint for stock.

Atenas, October 20, from New Orleans, with 858 crates fire brick, 921 pieces car stakes for stock; 615 pieces pine lumber for Atlantic Division; 395 tons dump car parts for Cristobal shops (for erection).

Zacapa, October 21, from New York, with 50 bales oakum for stock.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending November 2, 1910, (75th meridian time):

DATE.	High.	Low.	High.	Low.	High.
	A. M.	A. M.	A. M.	P. M.	P. M.
October 27	......	4.57	11.07	5.27	11.55
October 28	......	6.12	P. M. 12.30	6.38	......
October 29	1.03	7.18	1.38	7.38	......
October 30	1.58	8.10	2.28	8.27	......
October 31	2.43	8.53	3.11	9.10	......
November 1	3.20	9.32	3.48	9.47	......
November 2	3.55	10.07	4.20	10.22	......

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company, of the Royal Mail Steam Packet Company, of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Panama	P. R. R.	Saturday	Oct. 22
Allianca	P. R. R.	Friday	Oct. 28
Colon	P. R. R.	Friday	Nov. 4
Advance	P. R. R.	Thursday	Nov. 10
Panama	P. R. R.	Wednesday	Nov. 16
Allianca	P. R. R.	Tuesday	Nov. 22
Colon	P. R. R.	Monday	Nov. 28

CRISTOBAL TO NEW YORK.

Ancon	P. R. R.	Thursday	Oct. 27
Advance	P. R. R.	Saturday	Oct. 29
Panama	P. R. R.	Friday	Nov. 4
Allianca	P. R. R	Thursday	Nov. 10
Colon	P. R. R.	Wednesday	Nov. 16
Advance	P. R. R.	Tuesday	Nov. 22
Panama	P. R. R.	Monday	Nov. 28
Allianca	P. R. R.	Sunday	Dec. 4
Colon	P. R. R.	Saturday	Dec. 10

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 4th and 25th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Almirante	U. F C.	Thursday	Oct. 20
Prinz Aug. Wilhelm	H.-A.	Saturday	Oct. 22
Santa Marta	U. F. C.	Thursday	Oct. 27
Oruba	R.-M.	Saturday	Oct. 29
Metapan	U. F. C.	Thursday	Nov. 3
Prinz Joachim	H.-A.	Saturday	Nov. 5
Zacapa	U. F. C.	Thursday	Nov. 10
Magdalena	R.-M.	Saturday	Nov. 12
Almirante	U. F. C.	Thursday	Nov. 17
Prinz Aug. Wilhelm	H.-A.	Saturday	Nov. 19
Santa Marta	U. F. C.	Thursday	Nov. 24
Clyde	R.-M.	Saturday	Nov. 26
Metapan	U. F. C.	Thursday	Dec. 1
Zacapa	U. F. C.	Thursday	Dec. 8
Atrato	R.-M.	Saturday	Dec. 10
Almirante	U. F. C.	Thursday	Dec. 15
Santa Marta	U. F. C.	Thursday	Dec. 22

COLON TO NEW YORK.

Zacapa	U. F. C.	Friday	Oct. 28
Magdalena	R.-M.	Monday	Oct. 31
Almirante	U. F. C.	Friday	Nov. 4
Prinz Aug. Wilhelm	H.-A	Tuesday	Nov. 8
Santa Marta	U. F. C.	Friday	Nov. 11
Clyde	R.-M.	Monday	Nov. 14
Metapan	U. F. C.	Friday	Nov. 18
Prinz Joachim	H.-A.	Tuesday	Nov. 22
Zacapa	U. F. C.	Friday	Nov. 25
Atrato	R.-M.	Monday	Nov. 28
Almirante	U. F. C.	Friday	Dec. 2
Prinz Aug. Wilhelm	H.-A.	Tuesday	Dec. 6
Santa Marta	U. F. C.	Friday	Dec. 9
Tagus	R.-M.	Monday	Dec. 12

NEW ORLEANS TO COLON.

Turrialba	U. F. C.	Saturday	Oct. 22
Abangarez	U. F. C.	Saturday	Oct. 29
Atenas	U. F. C.	Saturday	Nov. 5
Turrialba	U. F. C.	Saturday	Nov. 12
Abangarez	U. F. C.	Saturday	Nov. 19
Atenas	U. F. C.	Saturday	Nov. 26

COLON TO NEW ORLEANS.

Abangarez	U. F. C.	Thursday	Oct. 20
Atenas	U. F. C.	Thursday	Oct. 27
Turrialba	U. F. C.	Thursday	Nov. 3
Abangarez	U. F. C.	Thursday	Nov. 10
Atenas	U. F. C.	Thursday	Nov. 17
Turrialba	U. F. C.	Thursday	Nov. 24
Abangarez	U. F. C.	Thursday	Dec. 1

COLON TO BARBADOS, CALLING AT TRINIDAD.

Oruba	R.-M.	Tuesday	Nov. 8
Magdalena	R.-M.	Tuesday	Nov. 22
Clyde	R.-M.	Tuesday	Dec. 6

The next sailing of the Leyland Line will be as follows: *Louisianian*, on or about November 13, for New Orleans, via Kingston, Ja.

Hamburg-American steamers leave for New York at 10 a. m., and for Port Limon every Tuesday or Wednesday.

Royal Mail steamers leave for New York on alternate Mondays at 5 p. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans leave on Thursday at 3 p. m., and for New York on Friday at 10 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3rd and 20th of each month.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, NOVEMBER 2, 1910. No. 10.

The Canal Record

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Address all Communications
THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Atlantic Entrance Terminal Facilities.

A study is being made of the land and water near the Atlantic entrance to the Canal on which to base plans for a terminal harbor and docks, such as have already been arranged for at the Pacific entrance. A survey has just been completed of the territory between Cristobal Point on the north, Gatun Locks on the south, the French canal on the east and the American Canal on the West, an area approximately four miles long and one mile wide. About 100 wash drill borings have been made to determine the nature of the bottom, and dry samples were taken from the holes at regular intervals. A few extra borings are being made north and west of Gatun Locks and when these are completed the terminal studies will be continued.

Hydraulic Fill of Colon.

The hydraulic fill of the lowlands in the southern part of the city of Colon will be begun this week. It forms part of the permanent improvement under the $800,000 appropriation for the further sanitation of the cities of Colon and Panama, approximately $500,000 of which will be spent in Colon. Twenty-two city blocks will be reclaimed and made fit for building sites by pumping coral sand from Manzanillo Bay upon the swampy area now uninhabitable. Filling will be begun on the area near Ninth street, between D and E streets, and about 100,000 cubic yards of the 558,000 of the total fill will be deposited there. It is estimated that the fill will require five months in the making, due to the heavy nature of the material to be pumped and the long distance it must be forced from the dredge to the city, most of it over a mile. The total lift is not over five feet.

The filling will be done by the 20-inch suction dredge *Sandpiper*, formerly excavating at Miraflores Locks, but recently reerected at Cristobal marine shops for use in the Atlantic Division. This dredge was towed from the shops to its position in Manzanillo Bay on October 29. In its reconstruction all the ladder machinery was renewed, including a new cutter head, cutter engine, ladder head, and the substitution of an 8-inch for the old 6-inch shaft which turns the cutter. The pump has been rebuilt and the engines and boilers thoroughly overhauled. An improved spud frame, by means of which the spuds are lifted and lowered without the mechanism being under water, has been built on the rear end, and round spuds have been substituted for the old square ones. The quarters for the crew have been refinished, and the whole upper deck is screened against mosquitos.

Corozal Recreation Hall.

The improvements authorized for the recreation hall at Corozal include an extension 35x60 feet on the north side of the present building. This will be divided into a reception and a billiard room, each 25 by 33 feet, with quarters for the secretary and a toilet room between them. The building will then include, besides the rooms mentioned, a sitting room and lobby, assembly hall, with stage, kitchen, and ladies' retiring room. The improvements will cost about $3,000.

Tug Miraflores Making Slow Time.

The new Pacific Division tug *Miraflores*, which left the shipbuilding yards at Wilmington, Del., on August 12 to voyage around South America to Balboa under its own steam, was reported by cable on October 24 as being off Valparaiso, Chile. The vessel is several days behind its schedule, as it was originally expected to arrive at Balboa about October 23. If the same rate of speed is maintained up the west coast of South America, the boat will probably not reach port before November 12.

18-inch Thermit Weld.

The largest piece of process welding ever done on the Isthmus was turned out this week from Gorgona shops. It is one of the 18¾-inch shafts of the rock breaker *Vulcan*, which is on subaqueous rock excavation in the Pacific entrance. This shaft forms a part of the ram by the weight of which the rock is crushed. It is made of compressed cast steel, is 56 feet long and weighs 19 tons. Immediately after it was broken it was placed on a car and sent to the shops at Gorgona where a mold was made for a Thermit weld. The weld was made last week, 1,000 pounds of Thermit and 200 pounds of wire nails being used. After the shaft had cooled it was annealed and dressed, and is now ready for further service.

Pacific Division Telephone Service.

A telephone plant, maintained and operated independently of the Panama Railroad Company's system, was installed by the Pacific Division a few months ago for use of its various offices and plants at Pedro Miguel, Miraflores, Corozal, Ancon quarry and Balboa. The exchange is situated in a wing of the yard office at Miraflores and about 50 stations are now served from it. Twenty-one lines have been strung and most of them are operated on the party-line system. The switchboard is wired for 50 lines, but by continuing the party-line method, it will be able to furnish service to upward of 100 stations. The apparatus is of the magneto type. Wherever possible, the poles carrying the transmission lines from the Miraflores power house have been utilized in stringing the telephone wires to stations at a distance. The plant is under the supervision of the chief electrician of the Pacific Division, and all repairs to apparatus are made and line troubles cleared by the force under him. Service is furnished only during working hours, and but one operator is employed. A directory containing the number of the stations, and their location, will be issued shortly.

Hydraulic Excavation at Miraflores Locks.

The four 7,500-gallon pumps that furnish water for the hydraulic work in the Pacific Division are working satisfactorily except that during the extreme low tides of the week ending October 22, the increased depth to water caused the pumps to labor and pound heavily. In order to obviate this difficulty, which occurs only during the extreme tides, two coffer dams are being thrown across the tidal channel, one above the pumping station and the other at some distance below, which will form a reservoir where a sufficient quantity of water can be impounded, so that the pumps can be kept running at their maximum capacity at all times. The lower coffer dam will be fitted with regulating gates, which will be opened at high tide so that the reservoir can fill. When the tide begins to ebb the gates will be closed.

All three of the dredging units on the concrete barges are in service. One has been connected through the relay pumping station near Cocoli Hill, which is intended to aid in lifting the material into the dam when the latter is nearing its permanent height of 70 feet. The connection was made at this time in order that the relay apparatus might be tested. No auxiliary pressure is required at present, for the dredging unit on barge *No. 2*, which is working through the relay station, has on recent trials made the lift through the pipe up and around the face of the hill to the dam to a height of 75 feet unaided.

The other two barge pumps are pumping directly into the core of the dam, both working in the lower lock site at Miraflores, where a pit of considerable extent has been opened. The excavation so far made indicates that this section may have been formerly the bed of a river, silt and débris having gradually filled the channel until it was finally diverted. Numerous limbs and trunks of cocoanut trees have been encountered in the mud at a depth of several feet below the surface of the ground. These are frequently drawn into and choke the suction pipes of the barge pumps. When

NOTES OF PROGRESS.

(*Continued.*)

this happens a colored workman dives to the mouth of the pipe and extracts the débris. The washings have also exposed a large quantity of gravel, the finer portion of which is carried out through the pipes.

The pit in which the dredging pumps are working has been unwatered, and is kept as nearly dry as possible. The plan for deepening it consists in making sumps beneath the barges to a depth of 10 feet or more, into which the material dislodged and disintegrated from the bottom of the pit can be washed by the nozzles of the hydraulic giants. A stream of water from Cocoli Lake finds its way into the pit and to prevent it from accumulating one of the pumps is kept at work nights.

Building Notes.

Seven type-15, one-family houses, formerly located on the street in Culebra, known as "Steam Shovel Row" have been dismantled and rebuilt at other points. Four have been taken to Gatun, two to Corozal, and one has been reconstructed on a site in front of the residence of the Chief Engineer. Four more of these houses are to be moved shortly, two to Pedro Miguel, one to Corozal, and one to a new site in Culebra. In reerecting the houses some modifications in the type are made, which practically convert them into type-17, one-family quarters. There has been an increase in the number of applications for married and bachelor quarters at Pedro Miguel and Corozal. On October 1, there were 10 applications on the No. 1 list and 42 on the No. 2 list for married quarters at Pedro Miguel and Paraiso, and one application on the No. 1 list and 30 on the No. 2 list for married quarters at Corozal.

The schoolhouse at Corozal will be converted into quarters for two families, with three bedrooms, a living room, dining room, dry room, bath and kitchen in each part. An 8-foot veranda surrounds the building on all sides.

The one-story part of house No. 40, located in the old part of Pedro Miguel, recently used as a storehouse, is to be converted into bachelor quarters. This is an old French building and was used as a hotel in 1905 and 1906, before the Commission hotel on the east side of the railroad track was built.

Plans have been prepared for fireman's quarters to be erected on the north toe of Gatun Dam, not far from the cement shed. The main part will be 18 by 20 feet in size, with a wing 6 by 6 feet. The purpose is to have a fireman within reach in case of fire, as the cement shed, power house, storehouse, and the unloading docks for sand and stone are all in the immediate vicinity.

House No. 2 at Culebra, situated near the penitentiary will be converted into a dispensary for the prison. It will be moved a short distance from its present site, in order that it may be included within the stockade without the necessity of making an angle which would be inconvenient to guard. The building will be provided with a ward for eight or more beds or cots, and a surgical room fitted with a medicine closet and the necessary shelving.

Nombre de Dios Sand Output.

The output of sand at Nombre de Dios in October was about 44,000 cubic yards, as compared with 32,500 cubic yards in September. During the latter part of the month the output was over 2,000 yards a day, and at this rate the sand pile at Gatun Locks can be built up rapidly. The 18-inch suction dredge *No. 4*, which is digging the sand, is now working on the site of the village where the deposit is deep and free from clay, and under present conditions it could excavate 4,000 cubic yards a day. At present, however, the four barges in the sand service are working at capacity in taking away 2,000 cubic yards, but four barges of 500 cubic yards capacity each, now on order in the States, will be added to the fleet early next year. With this addition to the barge service the suction dredge can be worked at its full capacity and the storage of sand in large quantities at Gatun may be begun.

The method of loading now in use will be changed within a few weeks by the installation of a charging bin on a dock alongside which the barges may tie up. At present the suction dredge pumps directly into the barges, and the operation disturbs the barge on which the pipe is resting, wastes sand overboard, and necessitates a large amount of pipe line work. It is proposed to erect a water-tight bin of about 200 cubic yards capacity and with three 20-inch discharge pipes hanging out over the water, each fitted with a valve. The dredge will pump into this bin, and the sand will be discharged into the barges lying at the dock beneath the discharge pipes. In this way the loading of the barges may be continuous, the work of adjusting the pipe line on each barge will be done away with, and the waste of sand overboard will be avoided.

Contract for Cement-Carrying Ships.

A contract has been made with the Munson Line to furnish all the ships necessary to carry cement to the Isthmus, in addition to that which can be carried by the steamships *Ancon* and *Cristobal* up to March 31, 1911. The rate allowed for this service is $1.70 a ton, while the rate allowed to the *Ancon* and *Cristobal* is $1.75 a ton. The contract was entered into after competitive bids had been received in the usual way, and the offer of the Munson Line was found to be the best. The steamer *Nordpol*, the first vessel to load under the new arrangement, arrived at Cristobal on October 31. There will be approximately one sailing a month of these steamers.

New Rock Crusher at Porto Bello.

The new No. 21 gyratory rock crusher for the crushing plant at Porto Bello was put in operation on September 6, and most of the changes suggested by the "trying out" of the past two months have been made, or have been determined upon. It has a capacity of 500 cubic yards an hour, but the barge service is not sufficient to carry away more than 3,500 yards daily, which is the amount required for the concrete at Gatun. The average daily performance, 12 hours a day, in October, was 3,040 cubic yards. This new crusher is supplementary to the plant of two No. 9 and four No. 6 crushers already installed at Porto Bello, which has been furnishing crushed rock for Gatun Locks and Spillway for over a year. Its purpose is to lessen the amount of secondary blasting or "dobeying" necessary to break the rock as it comes from the quarry into pieces small enough to be handled by the No. 9 crushers of the original plant. It does this work so well that already a saving of 50 per cent in the amount of dynamite used has been effected. The new crusher takes rock as it comes from the quarry, and only pieces that cannot be handled by the steam shovels now require secondary breaking. The openings on either side of the "spider," which spans the top of the crusher, are 42 inches wide and 96 inches long. The new conveyor, which takes rock from the crushers to the storage bin, is working satisfactorily and is capable of handling 400 cubic yards an hour.

CONCRETE WORK IN GATUN LOCKS.

Concrete work in Gatun Locks is about 40 per cent completed, 865,524½ cubic yards out of a total of 2,085,000 having been placed at the close of work on October 29. The record of concrete placed each day last week, and the total up to and including October 29, is shown in the statement below. Work has begun on the concrete cut-off wall, which will extend from the east side of the upper lock into the hill on which the division office is situated, this hill forming a part of the Dam. The floor in the middle lock is about 80 per cent completed, and the construction of the wall monoliths is advancing rapidly. On Friday morning, October 28, the cableways established a new hourly record, when 244 cubic yards of concrete and 28 cubic yards of hard rock, a total of 272 cubic yards, were placed from 8 to 9 o'clock.

On October 29, in the afternoon between 1 and 2 o'clock, tower No. 4 of the lock cableways placed 98 cubic yards of concrete, 48 cubic yards on cable A and 50 on cable B. The operators in the tower were E. C. Connolly and J. Mitchell. The foreman receiving the material was O. G. Shafer. Sixty-four cubic yards of the above amount were placed during the first 32 minutes, or at the rate of two cubic yards a minute.

DATE.	CONSTRUCTION PLANT.			AUXILIARY PLANT.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
October 24	1,888	73:30	6	1,484	22:00	2	376¾	3,748¾
October 25	1,908	73:40	6	1,316	21:00	2	310	3,534
October 26	1,625	69:00	6	1,418	22:00	2	267¼	3,310¼
October 27	1,868	72:48	8	1,118	20:00	2	339¼	3,325¼
October 28	2,312	73:24	8	1,192	21:00	2	255	3,759
October 29	1,986	73:00	6	1,240	15:40	2	384¾	3,610¾
*Additional 1-3 yard mixer	....	....	......	116.5	....	......	23½	140
Total	11,587	....	......	7,884.5	....	......	1,956½	21,428
Previously reported	....	....	......	....	....	......	....	844,096½
Grand total	....	....	......	....	....	......	....	865,524½

*The 1-3 yard mixer, installed on the east bank of the locks, began work at 1 o'clock on the afternoon of October 27.

EXCAVATION AT MINDI.

Work in this Section of Atlantic Division Resumed on October 24.

Excavation was resumed in what is known as the Mindi section of the Atlantic Division on October 24, when the 20-inch suction dredge *No. 86*, which has been pumping into the western section of Gatun Dam, was withdrawn from that work and began operations at Mindi. This piece of excavation is through a low hill. It was begun in July, 1907, when a steam shovel was set at work, and it continued as a steam shovel job up to the middle of November, 1909, when the pit was flooded during heavy rains and work ceased. At that time, 1,476,821 cubic yards had been excavated and it was estimated that there remained about 973,000 cubic yards, more than half of which is rock.

For some time prior to the flooding of the pit the steam shovels had been working below sea level, and one of them began a cut on the bottom of the Canal at 42½ feet below sea level a few weeks before the suspension of work. The pit was kept dry by a pumping plant and, although only a narrow dike separated the excavation from the French canal on the north, there was little trouble from seepage water. At the south end of the cut along the east side the shovels were excavating a quantity of mud which was sliding on slick rock into the prism. On the east side and about midway between the two ends another mass of loose dirt, which it is said was pumped from the French canal behind a row of piling, was moving into the prism. This loose material, which is more expensive than rock to excavate by steam shovel, will be pumped out by the suction dredge now at work there. After this has been done the dredge will be withdrawn, the dike between the excavation pit and the French canal restored, and the water in the pit pumped out, in order that the steam shovels may resume their work and remove the remaining rock.

Defective Roof Gutters.

A resolution has been signed by the Governor of Panama amending decree No. 38 of 1906 relative to defective roof gutters in the city of Panama. The decree of 1906 empowered the Panama Health Office to alter the gutters to conform to sanitary conditions, but its operation was not wholly successful. The resolution which was officially published on Saturday, October 29, renders it imperative for all owners having defective gutters to call on the Health Officer within 48 hours and consult with him as to the best means of placing them in repair. Ten days are given in which to make the necessary changes. If the property owners fail to comply with these provisions, the Health Office is empowered to take steps to repair the defective gutters or to remove them if they are not indispensable.

The Health Office inspectors are engaged in making a house to house inspection with the object of locating all unsanitary roof gutters and their work in this respect has been done on all lateral streets in the city up to Seventh street. Gutters are considered defective when pools of water are found by the inspectors to have collected in them after rains, thereby creating favorable breeding places for mosquitos. The roof gutters found in good condition are permitted to remain, although the gutter is eliminated in all new construction. There are no roof gutters on the houses erected in the recently improved districts of Guachapali, Santa Cruz and Cocoa Grove; it is only in the old part of the city that they exist, although even there many were removed in the city-wide crusade against mosquitos during the years 1905 and 1906.

Anti-Cigarette League.

Interest in the work of the Boys' Anti-cigarette League of Gorgona is well sustained, good membership both in the junior and senior sections being maintained. The senior section, under the leadership of Mrs. A. L. Hackenberg, has been engaged in the study of the scout movement, with the object of organizing for field work as soon as a suitable leader can be found. The section had a Hallowe'en party in October, the evening being spent in story-telling and a candy frolic. Under the direction of Mrs. J. B. Marsh, the junior section meets one evening in each week. Fifteen new books have been added to the circulating library and a number of games have been purchased. A prize for bringing in the largest number of members during the past year has been awarded to Carl Paulus.

Visit of the Mining Engineers.

A party of about 120 persons, members of the American Institute of Mining Engineers and their friends, arrived at Colon on the *Prinz August Wilhelm* from New York on November 1 for a visit of seven days on the Isthmus. The ship called at Havana and Kingston on the trip down and will call at Port Limon, Kingston, and Fortune Island on the return.

CONCRETE WORK IN PACIFIC DIVISION LOCKS.

The estimate of the amount of concrete to be laid in the locks at Pedro Miguel and Miraflores during October was 82,500 cubic yards. At the close of work on October 30, all but 2,954 cubic yards of this amount had been placed. On Monday, October 31, 3,537 cubic yards were laid in the two locks, bringing the combined total up to 83,083 cubic yards and exceeding the estimate by 583 cubic yards. Both plants were operated on the last two Sundays of the month. On Sunday, October 23, the two mixers in No. 1 berm crane at Pedro Miguel were operated for a total of 6½ mixer hours, and at Miraflores, two ½-cubic yard mixers were operated for a total of 14 mixer hours. On Sunday, October 30, the construction and auxiliary plants at both locks were operated on full time.

The concrete work in the Pedro Miguel Locks is a little over 44 per cent completed, 369,285 cubic yards out of a total of 837,400 having been laid at the close of work on October 29. The quantity placed in both the Pedro Miguel and Miraflores Locks during October—83,083 cubic yards—exceeds the previous best monthly record, that of September, 1910, by about 14,000 cubic yards.

The record of concrete placed during each of the six 8-hour working days of last week at the Pedro Miguel Locks, as well as that of Sunday, October 23, is shown in the following statement:

DATE.	CONSTRUCTION PLANT. 2-Cubic yard mixers.			AUXILIARY PLANT. 2-Cubic yard mixers.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu Yds.*			*Cu. Yds.*	*Cu. Yds.*
October 23	1,040	6:50	2	....	....	......	....	1,040
October 24	2,002	24:00	4	184	5:00	2	25	2,211
October 25	1,932	24:00	4	390	10:00	2	31	2,853
October 26	1,960	24:00	4	332	9:00	2	2	2,294
October 27	1,838	23:00	4	250	5:00	2	10	2,098
October 28	1,866	24:00	4	300	7:50	2	6	2,172
October 29	2,196	27:00	4	378	9:00	2	10	2,584
Total	12,834	152:50	3.71	1,834	45:50	2	84	14,752
Previously reported	....	....	......	....	....	......	3,414	354,533
Grand total	....	....	......	....	....	......	3,498	369,285

MIRAFLORES.

A total of 4,849 cubic yards of concrete was placed in the locks at Miraflores during the week ending October 29, the record for each of the six 8-hour working days, as well as that of Sunday, October 23, when part of the plant was in operation, being shown in the following table:

DATE.	AUXILIARY PLANT.							Total.
	2-Cubic yard mixers.			½-Cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds*
October 23	....	....	......	113	14:00	2	....	113
October 24	236	9:00	2	402	17:25	3	35	673
October 25	346	6:50	2	272	19:00	3	32	650
October 26	250	7:00	2	417	29:50	4	15	682
October 27	500	9:00	2	387	19:08	3	55	942
October 28	464	8:50	2	480	25:50	3	50	994
October 29	334	7:00	2	441	25:66	4	20	795
Total	2,130	47:00	2	2,512	149:99	3.14	207	4,849
Previously reported	....	....	......	....	....	......	963	44,776.5
Grand total	....	....	......	....	....	......	1,170	49,625.5

On Friday, October 28, No. 6, one of the new ½-cubic yard mixers in service at these locks broke, it is believed, all local records of output for a mixer of this size in one day, by producing 190 cubic yards in 7½ hours actual working time, an average of one batch of concrete every two and one-half minutes. The same mixer nearly duplicated the performance on Sunday, October 30, when it turned out 186 cubic yards.

P. R. R. RELOCATION.

Amount and Cost of Grading Between Gatun and Gamboa.

A statement has been prepared showing that the cost of grading on the relocation of the Panama railroad in the fiscal year 1910 was 70.725 cents per cubic yard. Another statement shows the cost in the months of July and August by items, and indicates a reduction. In the statement by months for the fiscal year there is a considerable difference in the cost, due to the fact that the material was charged against the work according to the month in which it was ordered out regardless of the fact of whether it was used during that month. The monthly averages are also affected by the yardage output. This statement follows:

Month.	Yardage.	Cost per cubic yard.
1909		*Cents.*
July	165,706	70.70
August	184,955	59.40
September	180,524	74.70
October	192,314	78.40
November	168,294	72.30
December	169,513	69.80
1910		
January	214,957	78.40
February	226,251	59.30
March	255,344	81.00
April	225,624	81.50
May	223,248	64.60
June	243,165	58.60
Average cost per cubic yard	....	70.725

It was estimated that on September 1 about three million cubic yards of material would have to be moved to complete the relocation between Gatun and Gamboa to permanent grade. Most of the temporary trestle, temporary track, clearing, and right-of-way work has been finished and will not be necessary to any large extent in the future. From this time on the material for the fill will be procured almost entirely from borrow pits, and it is believed that there will be a considerable reduction in cost of grading henceforth. The itemized statements for July and August follow:

COST OF EXCAVATION DURING JULY, 1910.

Total yardage, 197,000 cubic yards.	Total cost	Cost per cubic yard.
Steam shovel crews	$7,010.80	$0.0356
Dumping and doing temporary track work	26,640.95	.1352
Drilling and blasting	8,969.80	.0455
Train crews handling excavation.	10,246.15	.0520
Clearing	842.15	.0043
Finishing ditching and permanent track work	8,148.25	.0414
Supervision and other expenses	5,167.00	.0262
Ten per cent surcharge on labor	6,702.51	.0340
Charge for engine service	14,545.00	.0738
Coal for steam shovels	2,748.56	.0139
Material	32,309.40	.1640
Total cost per cubic yard in cents	....	$0.6259

COST OF EXCAVATION DURING AUGUST, 1910.

Steam shovel crews	$7,247.45	$0.0303
Dumping and building temporary tracks	22,530.95	.0941
Drilling and blasting	8,827.00	.0369
Clearing	1,209.15	.0050
Train crews handling excavation.	9,882.25	.0413
Finishing ditching and Monte Lirio track work	5,284.75	.0221
Supervision and other expenses	4,001.70	.0166
Ten per cent surcharge on labor	5,829.33	.0246
Coal for steam shovels	1,740.37	.0073
Charge for engine service	13,031.25	.0544
Material	28,698.48	.1198
Total cost per cubic yard in cents	....	$0.4524

The right-of-way along the operated line of the Panama railroad is being cleared of trees and undergrowth. This has involved the cutting down of a number of trees of considerable size along the railroad between Frijoles and Mount Hope. One tree, however, the largest on the railroad right-of-way, constituting a landmark near Ahorca Lagarto, has been spared.

Traffic on Roads near Cristobal Schools.

Drays, carts, wagons, and all steel-tired vehicles are prohibited from driving faster than a walk along Columbus avenue from its juncture with Fifth avenue to its juncture with Broad street, and along Fourth avenue from its juncture with Columbus avenue to house No. 35 on Fourth avenue, Cristobal, between the hours of 8 and 11.30 a. m., and 1 and 3.30 p. m., on Monday, Tuesday, Wednesday, Thursday and Friday of each week during the school year.

Heads of departments and divisions have been directed to instruct all teamsters accordingly.

Physician, Isthmian Canal Commission.

An examination will be held in the near future for the position of physician in the Isthmian Canal Service, for which qualified persons are urged to apply. Applicants should be between the ages of 20 and 40 years and be graduates of recognized medical schools. The entrance salary for this position is $1,800 per annum. The receipt of applications will be closed on November 8.

JOHN K. BAXTER.
Secretary, Isthmian Civil Service Board.
Culebra, C. Z., October 29, 1910.

Clearing Zone Trails.

Two trails extending from the Panama railroad to the Canal Zone boundary line near the native village of Arraijan are to be cleared under the supervision of the Superintendent of Public Works, in accordance with the notice calling for bids published on another page of this issue of THE CANAL RECORD. One of the trails begins at Cartagenita, a Canal Zone native settlement situated near the Panama railroad where it turns to cross the trestle over the Canal at Paraiso, and extends to Arraijan in the Republic of Panama, a village about one-fourth of a mile from the Canal Zone boundary line.

Another trail in the direction of Arraijan will be cleared, beginning at the native hamlet known as "Hong Kong," situated in a ravine just west of the Panama railroad and about 600 feet south of the dam at the Rio Grande reservoir. Before reaching the former site of Corocito village, the trail will be changed to avoid crossing the Arraijancito River.

The trail between the Canal Zone boundary and the native hamlet of Cochinito, situated about half way between Arraijan and Balboa will also be improved. It will follow the route of the old trail through the land leased by Dr. Rafael Neira, and its direction will be changed slightly to avoid crossing the Caceras River.

The trails are to be cut and cleared of all brush, cane, grass, poles and trees not exceeding one foot in diameter for a width of 20 feet, and the material is to be removed and piled or burned on the outside of the strip. The total distance to be cleared is approximately 17 miles.

There were formerly fairly good trails between Pedro Miguel and Arraijan, and Miraflores and Arraijan, but these have been abandoned to a large extent on account of the lock work at Pedro Miguel, and because of the patrol of the Cocoli Lake watershed, near Miraflores. In 1906, the Pedro Miguel-Arraijan trail was cleared and opened up for the greater part of the distance. In March and April, 1908, the Pedro Miguel-Arraijan and the Rio Grande-Arraijan trails were cleared by contract, and in April and May, 1909 the Miraflores-Arraijan trail was also cleared by contract. In 1909, part of the Arraijan-Rio Grande trail was cleared by the residents of that district who worked out their poll tax, and this year about three miles of the trail was cleared in the same manner. The trails above mentioned, together with the Empire-Chorrera trail, all converge at a point a little east of Arraijan. From there into the village the trail is well traveled and in fair condition.

Changes in United Fruit Company's Steamship Services.

Beginning with the steamer *Metapan*, which is scheduled to sail from Colon for New York on Thursday, November 17, the weekly sailings of the United Fruit Company's vessels for New York will be on Thursday at 11 a. m., instead of Friday at 10 a. m., as at present. Beginning with the sailing of the steamer *Parismina* from New Orleans on November 2, there will be a double weekly service of this company between Colon and New Orleans. There will be no change in the direct sailings on Thursday of each week to New Orleans; but a new service will be added with stops at Bocas del Toro, Limon, and Puerto Barrios, Guatemala. The steamers on this run will leave New Orleans every Wednesday, arriving at Colon Thursday of the following week at about 9 a. m. Returning, the vessels will leave Colon at 6 p. m., Thursday, arriving in New Orleans Friday of the following week at 4 p. m.

Missing Men.

Any one having information regarding the present whereabouts of W. T. Coburn, who was at one time in the employ of the Panama Railroad Company, is requested to communicate with THE CANAL RECORD.

Mrs. Laura Lester of 609 Davis street, Evanston, Ill., wishes to hear from her husband, who is supposed to be working on the Isthmus, as she is in a destitute condition and needs his help.

James Graham left New Orleans two years ago with a string of race horses with which he proposed to open a racing establishment on the Isthmus; a few weeks later Mrs. Graham joined him. Nothing has been heard from either of them since that time. Information concerning them should be addressed to THE CANAL RECORD.

Obituary.

Mrs. Rose Sapusnik, wife of Leon Sapusnik of Empire, died at Ancon Hospital on August 13, 1910. She was thirty-three years of age, had been on the Isthmus two and one-half years, and is survived by her husband and four children. Her body was sent to the States for interment in Washington cemetery, New York City, on the S. S. *Panama*, which sailed from Cristobal on August 23.

The contractors who have in hand the work of making and erecting the gates for the locks expect to have a force on the Isthmus early in December to begin the preliminary work.

NAOS ISLAND BREAKWATER.

A Gap of Less than 5,000 Feet Remaining to be Closed.

The breakwater which extends from the shore at Balboa, parallel with the channel of the Canal at the Pacific entrance, has been completed about two-thirds of the distance to Naos Island, and the gap between the end of the dump and the island is less than 5,000 feet long.

The method of construction is to drive a trestle out into the water and make a fill by dumping rock and earth dug from Culebra Cut, and when this fill is completed to drive another section of trestle. Dumping of spoil was begun in October, 1907, and the progress was rapid in proportion to the amount of material deposited until the channel, made by the French as an entrance into the basin at Balboa docks, was reached. Then slide after slide occurred to retard the filling. Time and again a whole section of trestle with its half made embankment would disappear over night; then new trestle would be made and the dumping continued. Since August, 1909, in fourteen months of continuous dumping, the breakwater has been extended toward the island only 2,500 feet, but it has been broadened and made stable almost its entire length of 2 miles. In several places on the dike the sum of the daily vertical settlements of the roadbed amounted to over 60 feet in three months. In the fiscal year 1910 there were dumped on the breakwater 182,000 cubic yards of rock and earth. Not one foot of the last mile of track now rests on the trestle on which it was originally built.

The old French channel has been crossed, and there are indications of firmer bottom as the trestle nears the island. Even now the 70-foot piles sink through 30 feet of soft mud before they find firm ground, and one day last week the outermost end of the fill sank several feet, making it necessary to suspend filling until the tracks could be bolstered up to the proper level. It is hoped the time has passed when sections of the trestle and embankment will sink below the surface of the water, because the sinkings are becoming less marked as the work advances. At low tide the nature of these sinkings may be seen, because on either side of the breakwater a beach of mud has been formed by material pushed out and up by the rock fill. On August 9, 1909, a clapet ran into the trestle carrying away several hundred feet of track which sank into the mud of the bottom. Some of the rail was fished out, but much of it was not recovered. Recently this lost rail has been forced to the surface on top of the mud which the rock fill is displacing.

After each sinking of the trestle the tracks are bolstered up and the dumping is renewed. The amount that can be dumped is limited only by the condition of the trestle. From 35 to 40 trains consisting of 20 cars of 20 cubic yards capacity each are dumped at Balboa every day, and in the fiscal year 1910 the amount dumped there and in the breakwater dike was 3,835,091 cubic yards. The filling can be done more rapidly than the piles can be driven and the limitation on the breakwater construction is therefore that of the trestle standing and allowing the fill to be completed.

At the request of the Government of Panama, the pathologist of the Commission, Dr. S. T. Darling, has been directed to visit the Pacora valley in the province of Panama to make an investigation into the nature and origin of a disease that is causing great mortality among the horses on the stock breeding farms.

Americans Injured in Panama.

Arrangements have been made between the Canal Zone Government and the Republic of Panama whereby Americans who are in any way injured in the city of Panama will be taken to Ancon Hospital for treatment, instead of to Santo Tomas Hospital as heretofore. It frequently happens that injuries to Americans in the city of Panama are the result of personal violence following a violation of the law, and in such a case the Canal Zone Government guarantees the return of the person to the authorities of Panama to answer whatever charges are lodged against him.

Notice to Rodmen and Levelmen.

In the notice sent out to rodmen and levelmen relative to the examinations for promotion, it was stated that the second squad of competitors should report for examination on Sunday, November 5. This should have read Sunday, November 6. It should also have been stated in the notice that competitors in the examination should provide themselves with tables of sines, cosines, etc. Those who were listed for the examination which took place October 30, and were unable to attend because of sickness or other unforseen circumstances, may attend the examination on November 6.

A. B. NICHOLS,
Chairman, Examining Board.
Culebra, C. Z., October 31, 1910.

Empire School Consolidation.

The addition to the Empire schoolhouse has been completed, and the consolidation of the Las Cascadas school with that of Empire was effected on Monday, October 31.

Improved Order of Red Men.

The regular monthly meeting of the intertribal committee of the Improved Order of Red Men will be held at Empire, Sunday, November 6, at 2 p. m. All the members of this committee from the various tribes, and as many more as can make it convenient, are requested to attend this meeting.

Cocles Tribe, No. 3, of Empire has sent out notices and invitations to the tribes to attend their meeting next Saturday night, November 5, at 7.30 o'clock. They have three "palefaces" to adopt, and are arranging for a" big smoker" after the meeting.

The committee on uniform by-laws is to have a meeting on Sunday morning, November 6, at 9.30 o'clock in the wigwam of Cocles Tribe at Empire.

W. H. KROMER, *D. G. I.*
Colon, R. P., October 31, 1910.

Change in Sailings of Hamburg-American Line.

The Hamburg-American Line has announced a change in its sailings for New York from Colon, which, however, do not affect those of the steamers *Prinz August Wilhelm* and *Prinz Joachim*. These vessels will continue to leave on alternate Tuesdays at 10 a.m. from Colon, via Kingston, to New York. In addition, the steamships *Sarnia* and *Sibiria* will leave every other Tuesday from Colon to New York direct, carrying second class passengers only. The change in the service became effective with the sailing of the *Sibiria* from Colon on **Tuesday, November 1.**

EXECUTIVE ORDER.

To Prescribe the Manner of Leasing Public Lands in the Canal Zone.

By virtue of the authority vested in me I hereby establish the following Order for the Canal Zone:

SECTION 1. The Isthmian Canal Commission is hereby authorized and empowered to establish rules and regulations, from time to time, for the leasing of public lands in the Canal Zone, in accordance with the provisions of the Act of Congress, approved February 27, 1909, and entitled: "An Act relating to the use, control and ownership of lands in the Canal Zone, Isthmus of Panama."

SECTION 2. The leases for public lands authorized to be made under said Act of Congress shall be executed by the officer in charge of the Land Office of the Canal Zone Government, with the approval of the Head of the Department of Civil Administration, but the Isthmian Canal Commission, with the approval of the Secretary of War, may designate some other officers to execute or approve such leases, when, in the opinion of the Commission it is necessary or convenient to do so.

WM. H. TAFT.
THE WHITE HOUSE,
October 7, 1910.
[No. 1253.]

PERSONAL.

Maj. Chester Harding, with Mrs. Harding and daughter, returned from annual leave in the States on the *Turrialba*, which arrived at Colon on October 27.

Chief Justice H. A. Gudger, with Mrs. Gudger, and Mr. E. J. Williams returned from leave in the States on the *Panama*, which arrived at Cristobal on October 28.

Maj. Edgar Jadwin and family, Mr. A. S. Zinn and family, and Mr. and Mrs. C. M. Saville returned to the Isthmus on the *Cristobal,* which arrived on November 2.

Ancon Rock Crusher.

A statement of the rock crushed at Ancon quarry during the week ending October 29, follows:

DATE.	Hours worked.	Cubic Yards.
October 24	7:05	2,680
October 25	6:50	2,677
October 26	8:10	2,635
October 27	7:10	2,530
October 28	8:25	2,395
October 29	8:20	2,690
Total	46:00	15,607

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the week ending October 29, follows:

DATE.	Hours worked.	Cubic Yards.
October 24	9:40	3,400
October 25	9:54	2,942
October 26	9:49	3,046
October 27	11:28	2,536
October 28	10:45	2,455
October 29	8:23	3,194
Total	59:59	17,573

Lock City Lodge, No. 5, Knights of Pythias, at a meeting on October 4, adopted resolutions of sympathy on the death of John J. Coit on September 1.

SOCIAL LIFE OF THE ZONE.

Women's Clubs.

There will be a meeting of the executive board of the Canal Zone Federation of Women's Clubs and conference of presidents at the Tivoli Hotel, Ancon, on Tuesday afternoon, November 8.

At the first general meeting of the Cristobal Woman's Club, in October, Dr. C. C. Pierce read a paper on sanitation. The first meeting of the art and literary department was held in the clubhouse on Wednesday, October 26, Mrs. C. C. Pierce, chairman of the department, presiding. The subject for the afternoon was "Famous Women in French History." Mrs. P. T. Murphy read a paper on Joan d'Arc, Mrs. I. P. Eppelsheimer on Catherine de Medici, Mrs. Pierce on Marie Antoinette, Mrs. A. O. Herman on the Empress Josephine, Mrs. H. Grant on Charlotte Corday, and Mrs. Charles H. Carter on Madame de Staël and the Empress Eugenie. The November program of the department meeting will be "A Trip to Paris," and in addition to the principal paper there will be short discourses on French life in town and country. In January, the annual complimentary concert of the department will be held.

The Christmas bazaar under the auspices of the home department, as announced in last week's issue of THE CANAL RECORD, will be held on Thursday, December 1, instead of November 30. The sale will be opened in the afternoon at 2 o'clock.

The Gatun Woman's Club held a Hallowe'en party at the residence of Mrs. C. H. Stoddard on Friday, October 29. There were 25 present. On the same evening, the Union Sunday school of Gatun held a Hallowe'en party in the lodge building, and on Saturday evening, a dance was held by the Kangaroos in the Commission clubhouse.

The Daughters of Rebekah entertained about 300 Gorgona residents at a Hallowe'en party at the lodge hall on Friday evening, October 28. There was a program consisting of vocal and instrumental music and recitations, while fortune telling and ducking for apples were features of the entertainment. The evening closed with an informal dance, refreshments being served in the intermission.

The Las Cascadas Sunday school held a Hallowe'en entertainment in the lodge building on Friday evening, October 28.

The Canal Zone Pythian Sisters celebrated the twenty-first anniversary of the founding of their order on Wednesday evening, October 26, the meeting being held in the lodge hall at Las Cascadas. The business meeting was followed by a social session, refreshments being served.

On Saturday evening, October 29, a Hallowe'en dance was given in the social hall at Corozal in which the general public took part. The evening was spent in games and dancing. The expenses of the entertainment were defrayed by subscription among the men, and refreshments were provided by the ladies. There were about 300 present.

Church Notes.

A men's dinner was given on board the Royal Mail steamer *Tagus* on Monday evening, October 24, under the auspices of the Cristobal Union Church. Dr. C. C. Pierce was toastmaster and the principal speaker of the evening was Dr. W. H. Bell of Colon Hospital. Selections for violin were played by Dr. Hill. Covers were laid for 110.

The Rev. J. H. Coin of Greenville, Miss., representing the Home Mission Board of the Southern Baptist Convention, arrived on the Isthmus on the United Fruit Company's steamer *Turrialba*, on October 6, for the purpose of conducting a series of evangelistic meetings and to assist in the work of the church in the Canal Zone for an indefinite time. On Sunday, October 16, a two weeks' series of meetings was begun in the Commission chapel at Gorgona.

The Home Mission Board has erected a parsonage for the resident pastor at Empire, which will be ready for occupancy within a short time. A lease of the building site opposite the Commission chapel was granted by the Panama Railroad Company, and lumber and other materials were purchased from the Commission at cost price. The house is a modified design of the Commission type-17 and cost $1,500. Of this sum, $300 were donated by the First Baptist Church of Empire and the remainder was contributed by the Mission Board.

There will be a dance at Ancon Hall on Saturday evening, November 19, for the benefit of the Roman Catholic Church at East Balboa, St. Mary's Star of the Sea.

Athletic Events.

A meeting of the presidents of the six baseball associations on the Isthmus will be held at Ancon on Sunday, November 6, to organize the Panama Canal Baseball League, adopt a constitution and elect officers. An executive committee will be appointed later by the president of the league, which will have in charge the preparation of the schedule of games for the 1910-11 season.

A game of ball was played at Ancon park on Sunday afternoon, October 30, between teams from Ancon and the U. S. S. *Yorktown*, resulting in favor of the *Yorktown* players by a score of 5 to 2.

Ten games have been played to date in the series between the employes of the Department of Civil Administration and the Ancon Hospital doctors, the Civil Administration team winning six, tieing two, and losing two.

An athletic meet will be held at the Empire baseball park on November 3, under the auspices of the West Indian athletic association of that village. There will be bicycle and foot races, and other endurance contests. Three expert bicyclists from Jamaica have promised to be present and participate.

Family Quarters.

Applications for married quarters were on file on October 1, as follows:

	No. 1 List.	No. 2 List.
Ancon	....	19
Ancon Hospital	....	3
Balboa	1	39
Corozal	1	30
Cristobal	2	163
Culebra	5	3
Empire	3	15
Gatun	1	134 (50)
Gorgona	15	92 (28)
Las Cascadas-Bas Obispo	3	11
Miraflores	....	1
Pedro Miguel-Paraiso	10	42
Porto Bello	4	27
Tabernilla	1	....
Toro Point	2	6
Total	48	585 (82)

The figures in parentheses show the number of applicants already occupying regular or nonhousekeeping family quarters at stations, other than those at which applications are filed. The No. 1 list is made up of employes who entered the service prior to January 1, 1908.

OFFICIAL CIRCULARS.

Panama Independence Day.

CULEBRA, C. Z., October 31, 1910.

CIRCULAR No. 358:

Thursday, November 3, 1910, the anniversary of the Independence of the Republic of Panama, will be observed as a holiday in the Canal Zone, and, as far as possible, all public business will be suspended on that day.

GEO. W. GOETHALS, *Chairman.*

Claims for Defective Castings.

CULEBRA, C. Z., October 30, 1910.

CIRCULAR No. 215-B (Superseding CIRCULAR No. 215-A):

Effective November 1, 1910, in lieu of circular No. 215-A of August 22, 1910, the following rules will govern the procedure to be followed in all machine and repair shops of the Isthmian Canal Commission and the Panama Railroad Company in case a casting made at the Gorgona shops has to be rejected on account of defects.

If it is necessary for any machine or repair shop to reject, on account of defects, a casting of any material made at the Gorgona shops, after it has been partly or entirely machine finished, a tag will be attached to it, with the correct designation of the casting and the name of the shop rejecting it written in ink on one side, and "The Superintendent, Mechanical Division, Gorgona Shops, Gorgona, Canal Zone," on the other side, and the casting delivered to the nearest Quartermaster's storekeeper, who, acting in the capacity of shipping agent only, will ship it to the addressee.

Upon the rejection of each defective casting the shop which worked thereon will submit promptly a claim on the superintendent of the Mechanical Division, on form D. O. 440 for credit for the original cost of the casting, the actual cost of machine work done on the casting, the cost of handling and laying it out, the amount of general shop expense, and the total cost of the work lost, including that of the casting.

After verification of the correctness of the claim it will be allowed by the superintendent of the Mechanical Division, and the shop so informed. Each claim allowed will be entered on form 221 C. E., under the proper foundry account, and the amount thereof included in the total monthly cost of the castings and in the price per pound fixed for them.

The same method of claim and allowance will be followed in cases of defects in castings developed in Gorgona shops.

GEO. W. GOETHALS,
Chairman and Chief Engineer,
Isthmian Canal Commission.
President, Panama Railroad Company.

Compensation to Injured Employes.

CULEBRA, C. Z., October 31, 1910.

CIRCULAR No. 235-C:

The Solicitor of the Department of Commerce and Labor has rendered the opinion that an injured employe who is entitled to compensation under the Act of Congress approved May 30, 1908, and who by reason of his injury is unable to do his regular work, cannot be required to render other service. This should be thoroughly understood, and no employe should be permitted to work under the provisions of circular No. 235-A until it has been carefully explained to him that he can draw his full injury pay without rendering any service whatever, and unless with a complete understanding of his rights he shall prefer to work rather than remain idle.

GEO. W. GOETHALS, *Chairman.*

Work for Disabled Employes.

CULEBRA, C. Z., September 1, 1909.

CIRCULAR No. 235-A:

In case an employe entitled to the benefits of the Government Employes' Compensation Act, approved May 30, 1908, is disabled in such manner that after recovery he is unable to resume his regular duties, he shall be entitled to the benefits of said Act for a period of one year from date of injury.

If, however, such employe elects to work at a decreased remuneration in some other position in order to gain seniority or acquire experience to fit himself for promotion, he may do so with the understanding that the amount of his pay will be deducted from the amount to be paid him as injury compensation.

H. F. HODGES, *Acting Chairman.*

Equipment Surveyed and Turned In.

CULEBRA, C. Z., October 28, 1910.

CIRCULAR No. 323-A:

Equipment surveyed and turned in to the Quartermaster's Department by direction of the Chairman to be dismantled and used in making repairs to similar equipment will be handled as follows:

The unit will be invoiced to the designated storekeeper, 50 per cent of the original cost being placed to the credit of the division or department making the invoice.

The storekeeper will take up the unit on his return and account for it until a certificate can be rendered that all available parts for repair have been removed, when the unit will be scrapped and dropped from his return on the above certificate.

Divisions or departments desiring to utilize available parts of the unit will place foremen's requisitions therefor, which will be priced at the price-book price of such parts, the parts being taken up by the storekeeper as found at post and dropped on the requisition.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

False Clearance Papers.

CULEBRA, C. Z., October 29, 1910.

HEADS OF DEPARTMENTS AND DIVISIONS:

The attention of this office has been called to the presentation by silver employes of clearance papers which have been altered after delivery to employes so as to entitle the holders to higher rates of pay. Any employe presenting such a clearance can be convicted on a charge of an attempt to defraud the Government by a false representation, or by a false token. When such clearances are presented in the future the foreman receiving same should report the matter to the officer in command of the nearest police station, in order that he may be able to make an investigation, and if desired, secure the necessary affidavit from the foreman for apprehending the person presenting the false clearance.

GEO. W. GOETHALS, *Chairman.*

Temporary Services of Mechanics.

CULEBRA, C. Z., October 26, 1910.

CIRCULAR No. 357:

1. The economical administration of machine shops engaged entirely or principally in repair work requires the employment therein of the minimum number of workmen that can make the average quantity of repairs within the permissible time limit. To facilitate the prompt obtaining of additional workmen necessary at any time to make repairs in excess of the average quantity, and for other purposes, the division engineers of the Central, Atlantic and Pacific Divisions, or such of their assistants as they may designate, are hereby authorized to call directly upon the superintendent of the Mechanical Division for the temporary services of such number of machinists, blacksmiths, boilermakers and other craftsmen, and helpers, as may be required.

2. Each request made for the temporary services of employes should state separately the number of each trade required for day and for night work, the number of helpers for each trade, the probable length of time their services will be required, and the person to whom and place at which they should report, in order that assignment may be made in such manner as will insure the continuous employment of not more than eight hours per day to each employe, except when overtime is ordered in cases of emergency.

3. Division engineers and their subordinates will have entire jurisdiction over and will arrange for and obtain suitable quarters for such employes during the period of their temporary services.

The time of each employe will be kept by the borrowing division in the manner as prescribed for other employes, except the names of the temporary employes will be grouped in time books under the heading, "Temporary Employes from Mechanical Division," and will not be carried to the time and pay rolls. The labor charges of temporary employes will be charged direct to the job or jobs on which they work, as in the case of other employes. The time in transit from and to Gorgona shops will be charged to the borrowing division.

4. The Mechanical Division will promptly furnish the division engineer with the names, trades, wages, and date and hour of departure, of each employe furnished upon request, and a copy of each list will be sent to the Examiner of Accounts. When their services are no longer required the employes will be directed to return to the Gorgona shops, unless the superintendent of the Mechanical Division specially requests that they be sent elsewhere. The superintendent of the Mechanical Division will be furnished promptly with a statement showing for each employe the number of hours of work performed each day, date and hour of arrival and departure, and character of workmanship.

5. All employes sent from Gorgona shops on temporary duty will be carried and paid on the pay rolls of the Mechanical Division, and the time worked by each employe on each day will be entered from the statement furnished by the division engineer. The Mechanical Division will render each division engineer a bill covering the total labor temporarily furnished during each month. The bill will show the total amount of labor and a surcharge thereon of ten per cent to cover annual leave, holiday pay, etc.

6. The construction division will include the direct part of the labor charge in the properly distributed items and the ten per cent surcharge in the items of shop expense on form 132 C. E. To make the total labor agree with the pay roll a credit of the total amount should be taken under the item "Temporary Labor from Mechanical Division" in the "Labor" column, and recharged in the column "Other Expenses."

The amount of the surcharge will be credited by the Mechanical Division to "Vacation, Sick and Transit Time," and the total amount charged to the proper construction division.

H. F. HODGES,
Acting Chairman and Chief Engineer.

Civil Service Examinations Not Official Business.

CULEBRA, C. Z., October 25, 1910.

HEADS OF DEPARTMENTS AND DIVISIONS:

Several inquiries have been received of late relative to the issue of official business trip passes to employes who have entered the civil service examinations held at Culebra. Competitors in these examinations are not traveling on official business, and should be required to use their monthly allowance passes or half-rate requests.

By direction of the Acting Chairman.

C. A. MCILVAINE, *Chief Clerk.*

Dentist at Empire.

ANCON, C. Z., October 26, 1910.

Dr. H. W. Mitten, dentist, having reported for duty is detailed for service with the Commission at Empire.

ROBT. E. NOBLE,
Acting Assistant Chief Sanitary Officer.

Rainfall from October 1 to 29, Inclusive.

MIDNIGHT TO MIDNIGHT.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	1.98	10	7.88
Balboa	1.77	10	8.69
Miraflores	2.06	22	12.78
Pedro Miguel	1.85	22	13.03
Rio Grande	2.93	18	14.35
Central Section—			
Culebra	2.88	18	13.03
Camacho	3.10	18	15.47
Empire	1.99	18	11.30
Gamboa	2.19	10	11.73
Alhajuela	2.72	20	14.79
El Vigia	2.65	21	16.68
Gorgona	2.30	10	12.18
San Pablo	2.79	19	14.45
Tabernilla	2.56	20	12.58
Bohio	2.92	20	11.85
Monte Lirio	5.39	20	13.09
Atlantic Section—			
Gatun	1.75	5	11.56
Brazos Brook	3.36	20	10.10
Cristobal	3.85	19	11.37
Porto Bello	1.20	5	*7.21

*To 5 p. m. October 28.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending November 9, 1910, (75th meridian time):

DATE.	Low.	High.	Low.	High.	Low.
	A. M.	A. M.	A. M.	P. M.	P. M.
November 3	......	4.25	10.42	4.50	10.55
November 4	......	4.54	11.15	5.20	11.27
November 5	......	5.24	11.48	5.48	12.00
			P. M.		
November 6	......	5.53	12.22	6.20	......
November 7	12.23	6.25	12.58	6.57	......
November 8	1.13	7.02	1.40	7.28	......
November 9	1.58	7.47	2.28	8.30	......

Bids for an Addition to Recreation Hall, Corozal.

Sealed proposals, for labor (exclusive of plumbing and painting) only, will be received at the office of the Constructing Quartermaster, Culebra, C. Z., until 3 p. m., November 12, 1910, and then opened, for the erecting of an addition to the recreation hall at Corozal by contract. Plans and specifications can be obtained from the Constructing Quartermaster by making a deposit of $5. Fifty dollars must be deposited with the proposal and $150 when the contract is signed.

C. A. DEVOL, *Chief Quartermaster.*

Contract for Clearing Trails.

MOUNT HOPE C.Z., October 25, 1910.

Bids will be received at the office of the Purchasing Agent on the Isthmus, Isthmian Canal Commission, Mount Hope, C. Z. up to 2.30 p. m., Monday, November 14, 1910, at which time they will be opened in public, for clearing the Arraijan-Rio Grande trail from the Canal Zone boundary to a point on the Panama railroad, 600 feet below the Rio Grande dam, a distance of about seven (7) miles; and for clearing the Arraijan-Paraiso trail from the Canal Zone boundary line to the Panama railroad, a distance of about six (6) miles; and also for clearing the Arraijan-Cochinito trail from the Canal Zone boundary line, south of Arraijan, to the village of Cochinito, in the Canal Zone. The work shall be done in accordance with specifications to be had upon application to the Superintendent of Public Works, I. C. C., Administration Building, Panama. Proposals may be made for the clearing of each trail separately, or for the three. The successful bidder will be required to furnish bond or cash deposit in the amount of $25 for each trail as a guarantee that the work will be carried out. Proposals should be enclosed in sealed envelopes, marked "Proposals for clearing Arraijan-Rio Grande, Arraijan-Paraiso and Arraijan-Cochinito trails." The Commission reserves the right to reject any and all bids, to accept any bid as may be deemed to its interest, and to waive defects and informalities in proposals.

CHARLES L. PARKER,
Purchasing Agent on the Isthmus.

COMMISSARY DEPARTMENT.

Panama Cookery Book.

CRISTOBAL, October 31, 1910.

The first edition of the Panama Cookery Book has been received and placed on sale at 75 cents per copy in all commissary stores.

This book was compiled by the Home Department of the Canal Zone Federation of Women's Clubs.

EUGENE T. WILSON,
Subsistence Officer.

Thanksgiving Fruit Cakes.

CRISTOBAL, C. Z., October, 22, 1910.

Fruit cakes for Thanksgiving are now ready for delivery, and orders for the same at $1 each will be taken.

EUGENE T. WILSON,
Subsistence Officer.

Cold Storage Prices.

There are no changes in the prices of cold storage articles from those quoted in last week's issue of THE CANAL RECORD.

Married.

SMITH-O'CONNOR—At Randolph, Neb., on September 30, Florence Margaret, daughter of Mr. and Mrs. D. C. O'Connor, to Leroy Smith of Bridgeton, N. J. Canal Zone residence, Gorgona.

GAMBLE-SNYDER—At Senatobia, Miss., on October 19, Minnie May, daughter of Mr. and Mrs. J. B. Snyder, to Robert McDuffy Gamble. Canal Zone residence, Gatun.

CHAMBERS-HENNIGH—On October 26, at the home of the bride's parents in Paraiso, Adda Lenore Hennigh to Albert Livain Chambers, the Rev. Carl H. Elliott officiating. Canal Zone residence, Cristobal.

PALM-WINNE—On October 28, in the Commission chapel, Cristobal, Florence Nancy Winne to John Delmont Palm, the Rev. Carl H. Elliott officiating. Canal Zone residence, San Pablo.

Band Concert.

The Isthmian Canal Commission band will give a concert at Gatun, C. Z., on Sunday, November 6, 1910, at 2 p. m. The program follows:

1 March—*Monstrat Viam*....................Joy
2 Overture—*Poet and Peasant*..............Suppe
3 Intermezzo—*Silver Bell*..............Wenrich
4 Waltz—*Bad'ner Mad'ln*................Komzak
5 Medley Selection—*The Cristobal Minstrels*.Jennings
Introducing "Prairie Song Bird," "How Do You Do, Miss Josephine?" "Won't You Change Your name?" "I Am Awful Glad I Met You," "Could You Learn to Love Me?" "Can't You See?" "Pony Boy," "Strawberries," "Schoolmates," "Molly Lee," and "When We're Out on Dress Parade."
6 Caprice—*Goody Two Shoes*................Pryor
7 Humoresque—*What's the Matter With Father?*..........................Lampe
8 Duet for Cornet and Baritone—*Angels Serenade*.................Braga
Messrs. Smith and San Martin.
9 Selection—*The Chocolate Soldier*..........Strauss
10 March—*The Coming Regiment*..........Conterno

CHAS. E. JENNINGS, *Musical Director.*

The next concert will be given at the Cathedral Plaza, Panama, on November 13, at 7. 30 p. m., in exchange with the Republican Band, which will play at the Hotel Tivoli on that evening.

LOST—On dock No. 11 at Cristobal, on the special train from the *Panama*, or at Gorgona on October 28, a bank book. Return to Glen H. Pierson, Gorgona.

LOST—At Gatun commissary on October 25, an umbrella with light colored handle. Finder please return to house No. 70, Gatun.

Launch Service to Taboga.

The steamer *Sanidad* leaves the dredge landing at Balboa at 9 o'clock Tuesday, Thursday and Saturday mornings. On the return trip it arrives at Balboa about 4.30 p.m. in time to make connections for the 5.30 train at Panama.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA

The standing in the chess tournament is as follows:

	Won.	Lost.
Bartlett	5	7
Dubois	10	2
Goodenow	5	7
Mengel	2	10
Putnam	4	8
Stiles	6	5
Warner	9	2

The discussion club met on Wednesday evening; subject, "Fellowship," under the leadership of Mr. Smith of Gatun. Due to the interest shown and by request of the men that belong to the club, Mr. Kramer will spend one more evening on the discussion of "Diet." The club will meet on Thursday, instead of Wednesday evening.

The bowling game between the Gatun first team and the Culebra first team resulted in Culebra taking two out of three. The following are the scores:

Culebra.				Gatun.			
Cohen	192	212	149	Ponton	181	159	198
Herrington	171	177	148	Harrington	136	167	154
Hayes	191	163	159	DeMoll	142	149	200
Case	148	148	162	Wolf	162	165	158
Dougherty	196	156	226	Durand	173	160	145
Total	898	856	844	Total	794	800	855

The basketball game between Gatun and Culebra, first half 14 to 10 in favor of Gatun; second half, 9 to 13 in favor of Culebra, game tie. The final score was 23 to 26 in favor of Gatun. The line-up was as follows:

Culebra.	Position.	Gatun.
Cushing	Forward	Egleston
Purchase	Forward	Bob Porter
Vifquain	Center	C. Porter
Koperski	Guard	Mitchell
Johnson	Guard	Conners
Kersey	Guard	

The Empire Musical and Dramatic Society gave an entertainment at Culebra on Friday evening, October 28.

The billiard tournament opened on Tuesday, November 1, with nine contestants. The winner will receive a medal.

Men that desire to join the duckpin tournament should hand their names to the man at the office or to Mr. Dougherty.

A handicap tournament for big pins is being arranged for in which the men that finished in the last tournament are allowed to participate. E. A. Putnam has offered a gold medal for the winner.

EMPIRE.

Gorgona's second team defeated Empire two out of three games at bowling on the Empire alleys last Saturday evening. The score was as follows:

Empire.				Gorgona.			
Gustavson	189	152	137	Stoehr	154	130	135
Sawtelle	156	204	151	Humphrey	172	199	172
Goolsby	156	166	169	Montgom'y	150	131	113
Giavelli	164	197	130	M. Van	175	145	212
Bardelson	124	187	140	Bordt	159	185	192
Total	789	906	727	Total	810	790	824

At a meeting of those interested in the literary and debating society held Saturday night it was decided that the program committee would continue the policy that met with success during the past few months. At the next meeting, November 11, there will be a debate to be taken part in by all the members. All men anxious to practice in the art of public speaking are urged to join the society.

Cristobal defeated Empire's basketball team at Empire last Saturday night. The score was as follows: Empire 21, Cristobal, 29. The following players took part:

Cristobal.	Position.	Empire.
Sarter	Forward	Lyons
Prather	Forward	Eason
Vifquain	Center	Bartholomew
Weller	Guard	Seaton
Luce	Guard	King

The monthly pool tournament was won by H. M. Lloyd. There were 24 entries.

The Empire and Gatun basketball teams will play at Gatun next Saturday evening.

GORGONA.

On Wednesday, October 26, the Empire Musical and Dramatic Club gave an entertainment.

Saturday, October 29, Empire's first bowling team took three straight games from the local team. Scores as follows:

Gorgona.				Empire.			
Roper	181	135	191	Gorham	161	156	167
Stewart	162	162	179	Potter	177	210	179
Weigold	129		139	Shough	161	152	203
Halderman	145	162	129	Pearson	162	171	173
White	156	155	151	Huson	194	156	155
Otis		152					
Total	773	766	789	Total	855	845	877

McConaughey broke all local records for high average for three successive bowling games on Saturday, when he rolled 204, 210, 232, an average of 215. His score of 232 is also high score for the month of October.

At the men's meeting on Sunday afternoon the Rev. Mr. Coin gave an address entitled "Knocking at the Door."

Bowling, pool and billiards will be free on Thursday, November 3, until 6 p. m. All men are urged to spend the holiday at the clubhouse. New men are especially invited.

GATUN.

Louis Durand leads in the 3-cushion billiard tournament and A. J. McLain in the pool tournament.

Mr. Wilson of Porto Bello has accepted Mr. DePoorter's challenge at pool for the championship of the Isthmus. The game will be played in the latter part of November.

J. Dwight Safford of Camp Elliott acted as leader of the discussion club last Thursday evening, subject, "Leadership." The club has had an average attendance of 15 for the month of October and interest is such that the meetings will be continued during the month of November. Speakers and subjects will be announced later.

A handicap duckpin tournament will be started on Saturday, November 5. Medals will be given as prizes. Every member of the clubhouse is cordially invited to participate. Entry blanks and other information can be secured from T. G. DeMoll, supervisor of bowling. In addition to this, a prize will be given for high score in tenpins during November.

The first team of Gatun will play Gorgona's first team next Saturday night at Gatun. The public of Gatun are invited to witness the match as it determines the winner of the preliminary tournament. Gatun and Empire are now in the lead.

Gatun's second team plays at Gorgona next Saturday night.

All members wishing to participate in the Isthmian bowling tournament on Thanksgiving Day are requested to hand in their names at once to Mr. DeMoll. It has been decided that the bowlers of the several clubhouses shall bowl on their local alleys rather than all teams at a single clubhouse. Prizes will consist of cups, gold and silver medals.

Gatun's second team took all three games from the second team of Culebra last Saturday night. Scores follow:

Gatun.				Culebra.			
Dalton	157	165	168	Warner	137	146	165
H'r'g'n, C R	190	146	172	Huttle	124	133	105
Myers	176	202	189	Hayes	135	143	140
Wilson	198	141	182	Koperski	134	132	127
Hodges	148	161	202	Baumer	112		
				Fox		148	149
Total	869	815	913	Total	642	702	686

A number of new books have been ordered for the library.

Regular systematic gymnasium work will begin on Friday, November 4. Basketball practice on Monday and Thursday nights.

CRISTOBAL.

Dr. Claude C. Pierce, quarantine officer for Cristobal and Colon, conducted the last of the discussion club programs on Thursday night with the subject "Shall We Be Vaccinated?"

The Cristobal Dramatic Club met Friday night and drew up a constitution and by-laws. The following were elected to serve on the executive committee: Dr. Pierce, Mrs. Pierce and R. G. Goodman. Next week an informal program will be given by four members of the club.

A meeting of those interested in the Christmas entertainment held every year for the benefit of the children of Cristobal will be held at the clubhouse on Friday evening at 8 o'clock. Representatives from the Union Church, Woman's club, Cristobal school, Y. M. C. A., and fraternal orders or lodges are requested to be present in order that this matter may be carefully considered and plans undertaken for a successful affair.

Arrangements have been made by the Cristobal association with the Pan-American Pressing Club to take care of the work of its members. It will be started on November 1.

The regular afternoon gymnasium classes for the office men will be continued as usual on Tuesday and Thursday afternoons at 5.30 o'clock.

The orchestra from the *Prinz August Wilhelm* will play at the clubhouse on Thursday night. There is no charge for admission and all are welcome.

The second bowling team won two out of three games from the first team on Thursday night. On Saturday night, the married men defeated the single men in all three games.

The following were the winners of prizes during the month of October on the Cristobal alleys: High score, Dan Adams, 232; high average, J. W. Barrett, 170; greatest number of games rolled, 81, by G. K. Weston.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company, of the Royal Mail Steam Packet Company, of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Allianca	P. R. R.	Friday	Oct. 28
Colon	P. R. R.	Friday	Nov. 4
Advance	P. R. R.	Thursday	Nov. 10
Panama	P. R. R.	Wednesday	Nov. 16
Allianca	P. R. R.	Tuesday	Nov. 22
Colon	P. R. R.	Monday	Nov. 28

CRISTOBAL TO NEW YORK.

Panama	P. R. R.	Friday	Nov. 4
Allianca	P. R. R	Thursday	Nov. 10
Colon	P. R. R.	Wednesday	Nov. 16
Advance	P. R. R.	Tuesday	Nov. 22
Panama	P. R. R.	Monday	Nov. 28
Allianca	P. R. R.	Sunday	Dec. 4
Colon	P. R. R.	Saturday	Dec. 10

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 4th and 25th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Santa Marta	U. F. C.	Thursday	Oct. 27
Oruba	R.-M.	Saturday	Oct. 29
Metapan	U. F. C.	Thursday	Nov. 3
Prinz Joachim	H.-A.	Saturday	Nov. 5
Zacapa	U. F. C.	Thursday	Nov. 10
Magdalena	R.-M.	Saturday	Nov. 12
Almirante	U. F. C.	Thursday	Nov. 17
Prinz Aug. Wilhelm	H.-A.	Saturday	Nov. 19
Santa Marta	U. F. C.	Thursday	Nov. 24
Clyde	R.-M.	Saturday	Nov. 26
Metapan	U. F. C.	Thursday	Dec. 1
Zacapa	U. F. C.	Thursday	Dec. 8
Atrato	R.-M.	Saturday	Dec. 10
Almirante	U. F. C.	Thursday	Dec. 15
Santa Marta	U. F. C.	Thursday	Dec. 22
Tagus	R.-M.	Saturday	Dec. 24

COLON TO NEW YORK.

Almirante	U. F. C.	Friday	Nov. 4
Prinz Aug. Wilhelm	H.-A.	Tuesday	Nov. 8
Santa Marta	U. F. C.	Friday	Nov. 11
Clyde	R.-M.	Monday	Nov. 14
Sarnia	H.-A.	Tuesday	Nov. 15
Metapan	U. F. C.	Thursday	Nov. 17
Prinz Joachim	H.-A.	Tuesday	Nov. 22
Zacapa	U. F. C.	Thursday	Nov. 24
Atrato	R.-M.	Monday	Nov. 28
Almirante	U. F. C.	Thursday	Dec. 1
Prinz Aug. Wilhelm	H.-A.	Tuesday	Dec. 6
Santa Marta	U. F. C.	Thursday	Dec. 8
Tagus	R.-M.	Monday	Dec. 12
Metapan	U. F. C.	Thursday	Dec. 15
Zacapa	U. F. C.	Thursday	Dec. 22
Oruba	R.-M.	Monday	Dec. 26

NEW ORLEANS TO COLON.

Abangarez	U. F. C.	Saturday	Oct. 29
Atenas	U. F. C.	Saturday	Nov. 5
Turrialba	U. F. C.	Saturday	Nov. 12
Abangarez	U. F. C.	Saturday	Nov. 19
Atenas	U. F. C.	Saturday	Nov. 26
Turrialba	U. F. C.	Saturday	Dec. 3

COLON TO NEW ORLEANS.

Turrialba	U. F. C.	Thursday	Nov. 3
Abangarez	U. F. C.	Thursday	Nov. 10
Atenas	U. F. C.	Thursday	Nov. 17
Turrialba	U. F. C.	Thursday	Nov. 24
Abangarez	U. F. C.	Thursday	Dec. 1
Atenas	U. F. C.	Thursday	Dec. 8

COLON TO BARBADOS, CALLING AT TRINIDAD.

Oruba	R.-M.	Tuesday	Nov. 8
Magdalena	R.-M.	Tuesday	Nov. 22
Clyde	R.-M.	Tuesday	Dec. 6

The next sailing of the Leyland Line will be as follows: *Meltonian*, on or about November 13, for New Orleans, via Kingston, Ja.

Hamburg-American steamers leave for New York at 10 a. m., and for Port Limon every Tuesday or Wednesday.

Royal Mail steamers leave for New York on alternate Mondays at 5 p. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans leave on Thursday at 3 p. m., and for New York, beginning November 17, on Thursday at 11 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3rd and 20th of each month.

CANAL RECORD

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The Canal Record

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Address all Communications
THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Cost of Canal Construction.

Two exhibits showing the cost of Canal construction are published elsewhere in this issue of THE CANAL RECORD.

First, a summary showing costs of construction and engineering, including expenses for Quartermaster's Department, Examination of Accounts, Disbursing office, office of the Chairman, and purchasing expenses in the United States and on the Isthmus, but not including expenditures for sanitation, hospitals, civil government, lands purchased, terminal docks and wharves, relocation of Panama railroad, second main track of Panama railroad, purchase of steamers, construction and repair of buildings, municipal improvements in Panama and the Canal Zone.

Second, showing in detail the unit cost of lock and dam construction, including the spillways.

In the issue of November 16 there will be published a similar exhibit giving in detail the cost of excavation in the Canal prism, and the cost of rock and sand production.

Pacific Division Dredges.

The Pacific Division dredges, with the exception of the *Culebra*, the *Marmot* and the *Gopher*, are working in the Canal prism between the shipways and the zone of hydraulic operations. The suction dredge *Culebra* is working out at sea excavating loose material that has been drawn into the channel by currents and tidal wash. The *Marmot* is at work opposite the shipways widening the channel leading to the site of the new Panama railroad dock to 450 feet. The *Gopher* is engaged in dredging sand at Punta Chamé.

The *Mole* is making an under water cut on the west bank of the Canal opposite the sand dock. The *Badger* is making a pioneer cut to 35 feet on the west bank of the Canal, near station No. 2155, and is advancing at the rate of about 10 feet every 24 hours. Ahead of the dredge is a rock shoal which is being drilled and blasted. The dipper dredge *Cardenas* has been excavating mud on the east bank of the Canal, near station 2180, but was transferred this week to a point on the west bank, below the *Badger*, to remove a ledge of rock.

At the present time there is an open water channel at low tide from the sea to within a few hundred feet of the pumping station of the hydraulic plant. The width of this channel varies, but will average about 300 feet. The depth varies from 25 to 35 feet.

Dredging at Atlantic Entrance.

The dredges at work in the Atlantic entrance to the Canal accomplished more excavation during October than in any month since December, 1908, and the record has been surpassed in only seven months, as the following statement shows:

1910.	Cu. yds.
October	549,788
1908.	
May	564,386
June	572,749
July	675,497
August	638,217
September	624,776
November	570,832
December	679,604

The Atlantic dredging fleet was not occupied entirely in the Atlantic entrance during the month of October. Dredging in the French canal, at Gatun docks, and in the slip to the cement shed at Gatun occupied several days, the total excavation on this account being 28,791 cubic yards, making the month's work for the Atlantic Division dredges, not including those pumping material into Gatun Dam, 578,579 cubic yards.

Channel to Projected Lumber Dock.

The plans for the dredged channel to the reinforced concrete lumber dock, which is to be constructed at the Pacific entrance, near the site of the present sand dock, have been changed so as to provide for a channel 450 feet broad throughout. The original plan was for a channel 400 feet broad at the entrance and 300 feet broad opposite the sand dock. The ordinary lumber ship which enters Balboa would have to be towed stern first to the dock throughout this channel, a distance of 2,700 feet. The 450-foot channel will give room for economical dredging, head room for ships to pass congested points, and sufficient space for any but the largest ships entering the port to turn.

Barrack for Injured Laborers.

A number of employes drawing injury pay under the Act of Congress approved May 30, 1908, have recently been discharged from the Commission hospitals in order to relieve the hospitals of a class of patients that have been permitted to remain in the wards on account of helplessness rather than because further treatment could improve their condition. The injury pay due these patients is sufficient to maintain them for the time being, but in order to assist them as much as possible, two buildings of the standard barrack type, one for West Indians and one for European laborers, will be fitted up in one of the vacant labor camps. Janitor service will be furnished at the expense of the Commission.

Permanent Bridge Across Culebra Cut.

Lieut.-Col. H. F. Hodges, Lieut.-Col. D. D. Gaillard, Civil Engineer H. H. Rousseau, Mr. J. A. Smith and Lieut. F. Mears have been appointed a committee to make investigations, and submit plans and estimates for a permanent bridge across Culebra Cut.

Study of Canal Zone Geology.

Dr. C. W. Hayes of the United States Geological Survey arrived on the *Allianca* on November 3. He has been detailed, by direction of the President, to make a preliminary examination and study of geologic formations in the Canal Zone, especially with reference to Culebra Cut, and to lay out plans for future work in geology of the Canal.

Arrival of Tug Miraflores.

The tug *Miraflores*, arrived in Panama Bay on the morning of November 4, having made the trip up the west coast of South America from Valparaiso, Chile, in about 10 days, which was considerably better time than it made during the previous part of its voyage. It left the yards of Pusey and Jones at Wilmington, Del. on August 12, the builders having made a contract with the captain, R. G. Ludwig, for delivery at a stipulated price. The first stop was at Barbados, where the tug was in dry dock for eight days. It then continued on its voyage around South America meeting with almost continuous rough weather until after it had passed through the Strait of Magellan. Stops were made at Barbados, Pernambuco, Montevideo, Sandy Point, Coronel, and Callao. All but three members of the original crew deserted during the voyage, the vessel reaching its destination with 12 men, besides the captain and mate. The tug showed the effects of the rough voyage in its weather-beaten sides, while two or three panels in the deck house had been splintered by heavy seas. It was beached on Naos Island for inspection, and will be placed in commission with a new crew this week, towing sand barges to and from Punta Chamé. This will allow an opportunity for overhauling the tug *La Boca*, which has been handling the tows ever since the sand service was begun. Immediately after its arrival at Balboa, after the voyage of 13,000 miles, the *Miraflores* was given a speed trial and made 10 knots in 42 minutes.

The new tug conforms closely in dimensions and equipment to the *La Boca*. Its length is 118 feet 6 inches over all; breadth 23 feet, and depth at side 12 feet 6 inches. Its engine is of the triple expansion surface condensing type, has a 24-inch stroke, and is fitted with a high pressure cylinder 13 inches in diameter, intermediate cylinder 21 inches in diameter, and a low pressure cylinder 32

NOTES OF PROGRESS.

(*Continued.*)

inches in diameter. The boiler is of the cylindrical return tubular type, 14 feet in diameter, 12 feet 6 inches long, having three cylindrical furnaces 45 inches in diameter, and a combustion chamber with a working pressure of 150 pounds. Coal will be the fuel used. The condenser, consisting of ¾-inch solid brass drawn tubes, contains 900 square feet of cooling surface. Its electric plant is capable of supplying current for about 80 lights, and also a 120-ampere searchlight. The propeller shaft is 8½ inches in diameter. Two rooms are fitted up in the after part of the boat, one for the use of the captain, and the other for the mate.

The Pacific Division tugboat fleet now consists of four vessels, the *La Boca*, *Cocoli*, the supply boat *Chamé* and the *Miraflores*.

Gatun Dam Spillway.

The amount of concrete and large rock laid in the spillway of Gatun Dam during the weeks ending October 29 and November 5, is shown in the following statement:

DATE.	Cubic Yards.		
	Concrete	Large rock.	Total.
October 24	306	15	321
October 25	308	12	320
October 26	302	12	314
October 27	262	18	280
October 28	252	10	262
October 29	256	....	256
Total	1,686	67	1,753
Previously reported	....	....	100,566
Grand total	....	....	102,319
October 31	238	....	238
November 1	280	....	280
November 2	280	....	280
November 3 (Holiday)	....	....	....
November 4	160	....	160
November 5	258	....	258
Total	1,216	....	1,216
Previously reported	....	....	102,319
Grand Total	....	....	103,535

Garbage Cans in Colon.

On and after November 15, the Sanitary Department will cease supplying the householders in Colon with garbage cans. These cans have been supplied free of charge, but after the date above mentioned the Sanitary Department will dispose of all the cans in use in Colon at one-half their cost, and in future it will be necessary for the occupants of houses to provide their own cans. A decree, making the action mandatory, has been passed by the municipal council of Colon, and it will be published in a few days. In the city of Panama, garbage cans are furnished the occupants of houses by the municipality.

President Taft's Visit.

President Taft, according to latest advices, will sail from Charleston, S. C., on the armored cruiser *Tennessee* on November 10, arriving at Cristobal, either on the evening of the 14th, or on the morning of November 15. He will be the guest of Col. Goethals at Culebra during his visit. His intention is to remain on the Isthmus until November 20. He has accepted an invitation from the Government of Panama to be the guest of honor at a banquet on November 16. The party on the *Tennessee* will consist of the President's brother, Charles P. Taft; his secretary, Charles D. Norton; Capt. Archibald W. Butt, military aide; Lieut.-Commander L. C. Palmer, naval aide; and Maj. Thomas L. Rhoads, army surgeon. On the convoying cruiser *Montana* there will be six newspaper correspondents, Robert Small, Associated Press; Jerry Mathews, *New York Sun*; William Hoster, National News Service; F. E. Sturdevant, *New York World*; A. P. Arnold, United Press; and Henry S. Brown, *New York Herald*.

Spanish War Veterans Organizations.

The commander-in-chief of the United Spanish War Veterans, Col. Joseph J. R. H. Jacoby of Seattle, has designated John T. Oates of New York to come to Panama and organize three camps of the veterans in the Canal Zone. Commander-in-Chief Jacoby has promised to visit the Canal Zone in January and install the officers. Persons desirous of becoming charter members of the new camps should send name and address to Charles Cameron, Commissary Department, Cristobal, or to Charles Rose, Empire.

All veterans of the Spanish and Philippine campaigns residing in the Canal Zone are requested to send their names and addresses to John H. Lloyd, member of the Richard J. Hardin Camp, Washington, D. C., at Gatun. It is proposed to organize a camp of the Spanish War Veterans' Association in the Canal Zone, and all those eligible for membership are invited to cooperate to this end.

Ancon Rock Crusher.

A statement of the rock crushed at Ancon quarry during the week ending November 5, follows:

DATE.	Hours worked.	Cubic Yards.
October 31	5:10	1,665
November 1	5:50	2,010
November 2	6:40	2,264
November 3 (Holiday)		
November 4	7:05	2,340
November 5	7:20	2,555
Total	32:05	10,834

Visit of the Mining Engineers.

The party composed of members of the American Institute of Mining Engineers and their friends, numbering about one hundred and fifty persons in all, that arrived on the Isthmus on November 1, sailed for New York, via Kingston, on November 8. On their arrival, on Tuesday, they were taken at once to Hotel Tivoli, having reached Colon too late to inspect any portion of the Canal that day. On the following morning, Wednesday, they were taken by special train through the Culebra Cut; Thursday, being a holiday, was devoted mainly to an inspection of the models of the locks and dams in the Chief Engineer's office at Culebra; on Friday, they were taken by special train over all parts of the work in the Pacific Division; on Saturday, they were taken by boat to Taboga; on Sunday, they inspected Ancon Hospital; on Monday, they were taken by special train over the relocated line of the Panama railroad to Gatun where they inspected the locks and dam.

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the week ending November 5, follows:

DATE.	Hours worked.	Cubic Yards.
October 31	7:53	2,440
November 1	8:11	2,745
November 2	9:27	2,443
November 3 (Holiday)		
November 4	7:39	2,015
November 5	6:13	1,513
Total	39:23	11,156

Visit of Congressmen.

The Appropriations Committee of the House of Representatives, the Hon. James A. Tawney, chairman, will sail for the Isthmus on the *Ancon* on November 12, due to arrive at Cristobal on November 19.

Representatives of the World's Panama Exposition Company of New Orleans have arranged for a trip to the Isthmus in the interest of the exposition. They will be accompanied by members of the Louisiana Congressional delegation, and invitations have been sent to the members of the Senate Committee on Industrial Expositions and of the House Committee on Industrial Arts and Expositions to join the party. They propose to leave New Orleans on November 12, arrive at Colon on November 17, and depart on the return trip on November 24.

CONCRETE WORK IN GATUN LOCKS.

Concrete work in Gatun Locks is about 40 per cent completed, 861,849 cubic yards out of a total of 2,085,000 having been placed at the close of work on November 5. The record of concrete placed each day last week, and the total up to and including November 5, is shown in the statement below. No concrete was laid on November 3, Panama Independence Day.

DATE.	CONSTRUCTION PLANT.			AUXILIARY PLANT.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
October 31	2,444	43:57	6	1,164	16:00	2	290¼	3,898¼
November 1	1,771	33:02	6	1,376	21:28	2	327¾	3,474¾
November 2	1,473	25:29	6	1,520	22:26	2	324	3,317
November 3	Holiday		H					
November 4	1,952	33:54	6	1,274	20:00	2	309⅓	3,535⅓
November 5	1,802	31:53	6	1,190	19:00	2	307⅓	3,299⅓
Portable 1-3 yard mixer	....	....	......	204⅓	....	......	23	227⅓
Total	9,442	166:35	6	6,728⅓	98:54	2	1,582	17,752⅓
Previously reported	....	....	......	....	....	......	....	844,096⅔
Grand total	....	....	......	....	....	......	....	861,849

CONCRETE WORK IN PACIFIC DIVISION LOCKS.

The concrete work in the locks at Pedro Miguel is about 46 per cent completed, 384,292 cubic yards out of a total of 837,400 having been laid at the close of work on November 5. The output at these locks on Wednesday, November 2—2,878 cubic yards—was the largest for any one day since the beginning of the work on September 1, 1909. The combined output for the Pedro Miguel and Miraflores Locks on that day was 3,761 cubic yards. The combined output for the week at both locks—20,253 cubic yards—and the total for the week at the Pedro Miguel Locks—15,007 cubic yards, exceeded all previous records at these points.

A statement of the concrete placed during each day of last week, including Sunday, but excepting Thursday, is shown below.

PEDRO MIGUEL.

DATE.	CONSTRUCTION PLANT. 2-Cubic yard mixers.			AUXILIARY PLANT. 2-Cubic yard mixers.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			Cu Yds.			Cu. Yds.	Cu. Yds.
October 30	2,262	26:00	4	....	....	......	....	2,262
October 31	2,036	27:00	4	486	11:50	2	35	2,557
November 1	1,806	23:00	4	496	10:30	2	30	2,332
November 2	2,518	28:67	4	346	8:00	2	14	2,878
November 3	Holiday							
November 4	2,098	25:34	4	280	6:00	2	....	2,378
November 5	2,198	25:34	4	394	9:00	2	8	2,600
Total	12,918	155:35	4	2,002	44:80	2	87	15,007
Previously reported	....	....	......	....	....	......	3,498	369,285
Grand total	....	....	......	....	....	......	3,585	384,292

MIRAFLORES.

The total amount of concrete laid in the Miraflores Locks during the week ending November 5—5,246 cubic yards—has been exceeded but once at that point. The ½—cubic yard mixer, No. 6, surpassed its performance of producing 190 cubic yards in one day recently, by mixing 208 cubic yards on November 5. The time in the former instance, however, was 7½ mixer hours, and in the latter, 8¾ mixer hours, the output per mixer hour being slightly larger on the 190—yard day.

The record of concrete placed during each day of last week, Sunday included, but Thursday excepted, is shown in the following statement:

DATE.	AUXILIARY PLANT.										Total.
	2-Cubic yard mixers.			½-Cubic yard mixers.			½-Cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			Cu. Yds.						Cu. Yds.	Cu. Yds.
Oct....30	348	6:50	2	463	24:58	3	....	....	......	15	826
Oct....31	444	8:00	2	511	33:00	4	....	....	......	25	980
Nov....1	420	6:25	2	390	25:50	4	65	5:00	1	15	890
Nov....2	452	8:50	2	324	21:00	3	92	8:33	1	15	883
Nov....3	Holiday										
Nov....4	460	8:67	2	380	24:50	4	49	5:00	1	26	915
Nov....5	374	6:67	2	320	22:50	4	20	7:00	1	38	752
Total....	2,498	44:59	2	2,388	151:00	3.67	226	25:33	1	134	5,246
Previo'sly reported..	....	....	......	....	....	......	....	....	......	1,170	49,625½
Grand total...	....	....	......	....	....	......	....	....	......	1,304	54,871½

Ancon Dramatic Club.

The Ancon Dramatic Club is rehearsing Bronson Howard's play, "Young Mrs. Winthrop," which will be presented at the National Theatre, Panama, on Friday evening, November 18. There will be a special train from Las Cascadas and return for the occasion, and tickets will be on sale at the villages along the line after November 7. Twenty-five per cent of the net profits of this entertainment will be donated to the Panama Orphan Asylum. The club is an organization composed of Canal employes, or members of their families, residing in Ancon and vicinity. Its purpose is to produce standard plays, drama, comedy, and farce at intervals of two months. The courtesy of use of the National Theatre in Panama has been extended to the club for the performances. The money derived from the entertainments will be devoted, after the expense of the production is deducted, to the purchase of equipment for the staging of more elaborate plays, requiring costumes and special scenery. All profits in excess of a certain sum will be given to charities, American and Panamanian.

Collapse of Part of Dock No. 4.

A part of Panama railroad dock, No. 4, in Colon, covering a space about 20 by 70 feet, collapsed at 9 o'clock on the morning of November 8 with 3,500 bags of cement, most of which was lost. The cement had been unloaded from the steamer *Nordpol*, one of the ships chartered by the Munson Line to carry cement for the Commission.

Missing Men.

Any one having information regarding the present whereabouts of Henry L. Jernigan, who is supposed to be in the Canal Zone, is requested to communicate with the Director of Posts, Ancon, C. Z.

Information is wanted regarding the whereabouts of "Tony" Macon who is supposed to be in the Canal Zone. Address Evan J. Owen, Gorgona, Canal Zone.

Any one possessing information regarding the whereabouts of Abraham Hughes, who is believed to have left Peru for Panama in February, or March, 1907, is requested to communicate with the British Vice Consul at Colon.

PERSONAL.

Mr. Robert P. Porter, who is in charge of the South American supplement of the *London Times*, arrived on the Isthmus from Chile on October 31, remaining here until November 8, when he sailed for London, via New York. During his visit he made a thorough study of Canal work with a view to writing a series of articles for the *Times*.

Dr. Henry S. Drinker, president of Lehigh University, Pennsylvania, and Mrs. Drinker, were members of the party of mining engineers who visited the Isthmus last week.

Commander W. J. Maxwell, U. S. N., and Maj. W. C. Brown, U. S. A. were among the passengers on the *Allianca*, which arrived at Cristobal on November 3.

The Ven. Archdeacon Henry B. Bryan returned from his leave in the States on the *Abangarez* which arrived at Colon on November 3.

Order of Isthmian Conductors.

A regular meeting of the Order of Isthmian Conductors will be held at Las Cascadas at 2 o'clock on Sunday afternoon, November 13. All members are requested to be present. By order of the Chief Conductor.

F. H. ANDERSON,
Secretary and Treasurer.

Pedro Miguel, C. Z., November 7, 1910.

Johnson Sentenced.

Julius R. Johnson, found guilty of manslaughter in the Circuit Court at Empire on Wednesday November 2, was sentenced to four years at hard labor in the Culebra penitentiary, by Judge Wesley Owen, on Tuesday, November 8.

Band Concerts.

A concert will be given by the Banda Republicana of Panama at Hotel Tivoli, Ancon, on Sunday, November 13, 1910, at 7.30 p. m. The program follows:

1 March—*Outer Waffengefahrten*............Zeike
2 Waltz—*Birds' Voices*....................Vollstedt
3 Concerto for Clarinets.......................Gatti
4 Grand Variations from *Somnambula*........
Arranged by S. Jorge A.
5 Grand Potpourri—*Musical Jokes*..........Hamm
6 Grand Fantasia—*Dixie*...................Langey

SANTOS JORGE A., *Director*.

A concert will be given by the Isthmian Canal Commission Band in Cathedral Plaza, Panama, on Sunday, November 13, 1910, at 7.30 p. m. The program follows:

1 March—*Festal Day*..........................Roux
2 Selection—*Bright Eyes*..................Hoschna
3 Caprice—*Goody Two Shoes*.................Pryor
4 Overture—*Raymond*.......................Thomas
5 Waltz—*Bad'ner Mad'ln*...................Komzak
6 Medley Selection—*The Sunny South*......Lampe
7 Selection—*Bohemian Girl*...................Balfe
8 March—*The New Colonial*....................Hall

CHAS. E. JENNINGS, *Musical Director*.

The next concert will be given at Empire, November 20, at 6 p. m.

Proposals for Excavation in Canal Prism.

OFFICE OF CHIEF QUARTERMASTER,
CULEBRA, C. Z., November 2, 1910.

Sealed proposals for excavation of about 112,450 cubic yards of earth located at point 4–B, mile 29, on the Chagres River, will be received here until December 1, 1910, and then opened. Full information will be furnished by the division engineer, Empire, Canal Zone. Envelopes containing proposals must be endorsed "Proposals for excavation in Canal prism", and addressed

C. A. DEVOL,
Chief Quartermaster.

STATEMENT OF CONSTRUCTION EXPENDITURES TO SEPTEMBER 30, 1910.

Table No. 1.

Includes administrative and general expenses, but does not include general items or expenditures for sanitation, hospitals, and civil government.

ITEMS.	FIRST QUARTER, FISCAL YEAR 1911.			TO JUNE 30, 1910			TOTAL TO SEPTEMBER 30, 1910.		
	Quantities.	Amount.	Unit Cost.	Quantities.	Amount.	Unit Cost.	Quantities.	Amount.	Unit Cost.
Atlantic Division—	*Cubic Yards.*			*Cubic Yards.*			*Cubic Yards.*		
1 Dry excavation, prism		$1,775.05		1,476,824	$1,002,250.14	$0.6787	1,476,871	$1,004,025.19	$0.6799
2 Dredging excavation, prism	1,383,794	367,514.31	$0.2656	18,143,783	4,229,415.40	.2331	19,527,577	4,596,929.71	.2354
Gatun Spillway—									
3 Dry excavation	48,606	20,567.93	.4232	1,418,819	1,039,275.36	.7325	1,467,425	1,059,843.29	.7222
4 Preparing foundations	8,187	7,398.91	.9037	4,723	21,364.85	4.5236	12,910	28,763.76	2.2280
5 Masonry	10,510	82,086.31	7.8103	84,096	732,487.40	8.7101	94,606	814,573.74	8.6102
6 Ironwork					387.86			387.86	
7 Back filling	7,156	409.04	.0572	1,781	1,099.24	.6172	8,937	1,508.28	.1688
Total		$110,462.22			$1,794,614.71			$1,905,076.93	
Gatun Dam—									
8 Dredging excavation				38,425	$20,041.19	$0.5216	38,425	$20,041.19	$0.5216
9 Dry filling	632,987	$244,615.25	$0.3864	4,799,819	1,953,565.42	.4070	5,432,806	2,198,180.67	.4046
10 Hydraulic filling	1,326,335	275,382.42	.2076	3,653,222	1,043,646.57	.2857	4,979,557	1,319,028.99	.2649
11 Paving	18,374	5,726.74	.3117	22,037	6,788.50	.3081	40,411	12,515.24	.3097
Total		$525,724.41			$3,024,041.68			$3,549,766.09	
Gatun Locks—									
12 Dry excavation	217,532	$170,115.74	$0.7820	4,079,520	$2,708,600.00	$0.6639	4,297,052	$2,878,715.74	$0.6699
13 Dredging excavation				488,533	89,406.16	.1830	488,533	89,406.16	.1830
14 Preparing foundations, excavation	23,955	52,630.73	2.1971	33,843	98,502.50	.2.9105	57,798	151,133.23	2.6149
16 Preparing foundations, filling	22,334	4,089.32	.1839	17,883	10,607.43	.5932	40,217	14,696.75	.3654
17 Masonry	246,407	1,730,842.49	7.0243	513,803	4,000,909.02	7.7868	760,210	5,731.751.51	7.5397
18 Ironwork		156,437.33			252,666.68			409,104.01	
19 Back filling	48,786	45,504.20	.9327	4,190	5,199.81	1.2410	52,976	50,704.01	.9571
Total		$2,159,619.81			$7,165,891.60			$9,325,511.41	
20 Gatun-Mindi levee	50,459	$10,554.46	$0.2092	126,002	$57,914.73	$0.4596	176,461	$68,469.19	$0.3880
21 Colon breakwater	6,862	$128,084.57	18.6658		$56,120.86		6,862	$184,205.43	$26.8443
Total construction cost, Atlantic Division		$3,303,734.83			$17,330,249.12			$20,633,983.95	
22 Plant and equipment to be absorbed in construction costs after September 30.								$5,117,500.90	
Total expenditures, Atlantic Division								$25,751,484.85	
Central Division—									
23 Dry excavation, prism	4,506,272	$3,044,136.15	$0.6755	58,815,543	$55,254,020.04	$0.9394	63,321,815	$58,298,156.19	$0.9207
24 Clearing Canal line, without excavation				(Acres)2,098	134,857.24	64.2789	(Acres)2,098	134,857.24	64.2789
25 Dredging excavation					9,798.40			9,798.40	
Total construction cost, Central Division		$3,044,136.15			$55,398,675.68			$58,442,811.83	
26 Plant and equipment to be absorbed in construction costs after September 30.								$2,364,963.49	
Total expenditures, Central Division								$60,807,775.32	
Pacific Division—									
27 Dry excavation, prism	890	$2,470.53	$2.7758	239,173	$211,150.55	$0.8828	240,063	$213,621.08	$0.8899
28 Dredging excavation, prism	1,496,336	$490,256.60	$0.3276	$23,037,330	$5,512,096.04	$0.2393	$24,533,666	$6,002,352.64	$0.2447
Pedro Miguel Dam—									
29 Dry excavation					$925.47			$925.47	
30 Dry filling		$5.06		$260,852	$126,600.66	$0.4853	$260,852	$126,605.72	$0.4854
31 Hydraulic filling									
Total		$5.06			$127,526.13			$127,531.19	
Pedro Miguel Locks—									
32 Dry excavation				1,018,657	$987,900.41	$.9698	1,018,657	$987,900.41	$0.9698
33 Preparing foundations	27,604	85,008.31	3.0796	44,948	141,639.15	3.1512	72,552	226,647.46	3.1239
34 Masonry	143,430	700,410.27	4.8833	166,869	1,102,812.40	6.6088	310,299	1,803,222.67	5.8112
35 Ironwork		57,248,80			264,360.67			321,609.47	
36 Back filling	6,905	4,786.52	.6932	9,616	3,016.58	.3137	16,521	7,803.10	.4723
Total		$847,453.90			$2,499,729.21			$3,347,183.11	
Miraflores Dams and Spillway—									
37 Dry filling	26,408	$17,445.79	$0.6606	520,901	$313,884.60	$0.6026	547,309	$331,330.39	$0.6054
38 Hydraulic filling		39.39			4,077.86			4,117.25	
39 Masonry, core wall					429.51			429.51	
40 Dry excavation				14,536	19,991.26	1.3753	14,536	19,991.26	1.3753
Total		$17,485.18			$338,383.23			$355,868.41	
Miraflores Locks—									
41 Dry excavation, diversions				5,885	$2,028.98	$0.3448	5,885	$2,028.98	$0.3448
42 Dry excavation, in locks				1,350,135	1,422,325.30	1.0535	1,350,135	1,422,325.30	1.0535
43 Dredging excavation				309,647	142,379.66	.4598	309,647	142,379.66	.4598
44 Hydraulic excavation		3,613.07						3,613.07	
45 Preparing foundations	38,128	88,072.95	2.3099	64,036	140,621.82	2.1960	102,164	228,694.77	2.2385
46 Masonry	27,835	169,918.29	6.1045	1,630	13,224.18	8.1129	29,465	183,142.47	6.2156
47 Ironwork		53,012.85			95,440.87			148,453.72	
48 Back filling	12,465	6,659.67	.5343	530,291	101,960.20	.1923	542,756	108,619.87	.2001
Total		$321,276.83			$1,917,981.01			$2,239,257.84	
La Boca Locks and Dams (abandoned)—									
49 Dry excavation				78,233	$158,343.29	$2.0240	78,233	$158,343.29	$2.0240
50 Construction, dam					315,350.07			315,350.07	
51 Construction, locks					159,306.40			159,306.40	
Total					$632,999.76			$632,999.76	
52 Naos Island breakwater		$319.10			$36,867.76			$37,186.86	
Total construction cost, Pacific Division		$1,679,267.20			$11,276,733.69			$12,956,000.89	
53 Plant and equipment to be absorbed in construction costs after September 30								$3,489,908.67	
Total expenditures, Pacific Division								$16,445,909.56	
Total expenditures, constr. and engr'n'g.								$103,005,169.73	

Item 7—*Gatun Spillway Back filling.* Material obtained mainly from excavation in preparing foundations, expenses in connection therewith being charged to Item No. 4.

Item 21—*Colon Breakwater.* Unit cost computed on basis of yardage placed in breakwater. Expenditures represent preliminary work, such as tracks, trestles, etc. Filling was commenced only in September, 1910.

Item 25—*Dredging excavation, prism.* Preliminary surveys.

Item 38—*Miraflores Dams and Spillway.* Hydraulic filling. Expenditures represent preliminary work, such as pipe lines, flumes, etc.

Item 44—*Miraflores Locks.* Hydraulic excavation. Expenditures represent preliminary work.

Items 49, 50, 51—*La Boca Locks and Dams.* These expenditures were incurred prior to adoption of Miraflores as site for the lower locks and dams at the Pacific entrance to the Canal.

Item 52—*Naos Island Breakwater.* Expenditures represent cost of trestling only. Filling is done by Central Division and the cost thereof charged to Item No. 23—Central Division dry excavation, prism.

Items 22, 26, and 53—*Plant.* The expenditures for plant and equipment are absorbed into construction costs on the basis of estimated total cost of plant, and the estimated quantities of work to be done. The amounts shown under these items represent the balance of the expenditures which are to be absorbed into construction costs after September 30.

General—When excavated material is used in filling, such as dams, back filling, etc., the cost of dumping only is charged to the items benefited.

DAM CONSTRUCTION.

Table No. 2.

Tabulated cost per cubic yard for quarter ending September 30, 1910;

Items.	Gatun Dam.				Gatun-Mindi Levee.				Miraflores Dam.			
	July.	August.	Sept.	Total.	July.	August.	Sept.	Total.	July.	August.	Sept.	Total.
Dry Fill—Quantities—cubic yards	180,111	229,774	223,102	632,987	19,619	17,591	13,249	50,459	4,290	10,898	11,220	26,408
Clearing site	$0.0056	$0.0033	$0.0068	$0.0053	....	....	....	....	....	....	....	....
Tracks	.0940	.0564	.0583	.0678	....	....	....	....	$0.0457	$0.1266	$0.1733	$0.1333
Trestle	.0028	.0042	.0078	.0051	....	....	....	....	....	....	....	....
Transportation	.0142	.0618	.1406	.0760	....	....	....	....	.1442	.1537	.1712	.1597
Filling	.0909	.0965	.0869	.0915	$ 0.1207	$ 0.0813	$ 0.0985	$ 0.1011	.0703	.0301	.1264	.0775
Maintenance of equipment	.0083	.0074	.0147	.0102	....	....	....	....	.0524	.0443	.0460	.0463
Plant arbitrary	.0770	.0770	.0770	.0770	.0770	.0770	.0770	.0770	.1600	.1600	.1600	.1600
Division expense	.0251	.0222	.0192	.0220	.0170	.0110	.0117	.0135	.0201	.0156	.0309	.0228
Total division cost	$0.3179	$0.3288	$0.4113	$0.3549	$0.2147	$0.1693	$0.1872	$0.1916	$0.4927	$0.5303	$0.7078	$0.5996
Administrative and general expenses	$0.0339	$0.0284	$0.0329	$0.03 15	$0.0208	$0.0151	$0.0159	$0.0176	$0.0779	$0.0427	$0.0723	$0.0610
Total cost	$0.3518	$0.3572	$0.4442	$0.3864	$0.2355	$0.1844	$ 0.2031	$0.2092	$0.5706	$0.5730	$0.7801	$0.6606

Items.	Gatun Dam.			
	July.	August.	Sept.	Total.
Paving—Quantities—cubic yards	7,602	5,236	5,536	18,374
Clearing site	$0.0056	$0.0033	$0.0068	$0.0053
Filling	.2118	.1031	.2056	.1789
Plant arbitrary	.0770	.0770	.0770	.0770
Division expenses	.0300	.0140	.0160	.0212
Total division cost	$0.3244	$0.1974	$0.3054	$0.2824
Administrative and general expenses	$0.0367	$0.0163	$0.0310	$0.0293
Total cost	$0.3611	$0.2137	$0.3364	$0.3117

Items.	Gatun Dam.			
	July.	August.	Sept.	Total.
Hydraulic Fill—Quantities—cubic yards	462,092	406,606	457,637	1,326,335
Clearing site	$0.0056	$0.0033	$0.0068	$0.0053
Clearing for dredge	.0069	.0084	.0054	.0069
Dredging	.0644	.0594	.0729	.0658
Relay pumps	.0026	.0023	.0008	.0019
Pipe lines	.0268	.0112	.0179	.0189
Wood flumes	....	....	....	....
Power	.0124	.0130	....	.0083
Small boats	.0010	.0011	.0014	.0011
Maintenance of equipment	.0321	.0428	.0108	.0280
Plant arbitrary	.0490	.0490	.0490	.0490
Division expense	.0084	.0090	.0057	.0077
Total division cost	$0.2092	$0.1995	$0.1707	$0.1929
Administrative and general expenses	$0.0131	$0.0172	$0.0141	$0.0147
Total cost	$0.2223	$0.2167	$0.1848	$0.2076

LOCKS AND SPILLWAYS CONSTRUCTION.

Table No. 3.

Detailed cost per cubic yard for quarter ending September 30, 1910.

Items.	Gatun Spillway.				Gatun Locks.				Pedro Miguel Locks.				Miraflores Locks.			
	July.	August	Sept.	Total.	July.	August	Sept.	Total.	July.	August	Sept.	Total.	July.	August	Sept.	Total.
Dry excavation—Quantities—cubic yards	15,436	10,508	22,662	48,606	70,503	76,681	$70,348	217,532	......	......	......	......	......	......	......	......
Drilling	......	......	$0.0004	$0.0002	$0.0288	$0.0234	$0.0215	$0.0245	......	......	......	......	......	......	......	......
Blasting	......	......	.0106	.0049	.0486	.0322	.0392	.0398	......	......	......	......	......	......	......	......
Loading by power	$0.0586	$0.0518	.0747	.0646	.1002	.0546	.0779	.0769	......	......	......	......	......	......	......	......
Tracks	.0100	.1273	.0644	.0607	.1644	.1416	.0969	.1345	......	......	......	......	......	......	......	......
Transportation	.0643	.0427	.0654	.0602	.1536	.1445	.1351	.1444	......	......	......	......	......	......	......	......
Trestles	......	......	.0035	.0016	......	......	......	......	......	......	......	......	......	......	......	......
Pumps	......	......	......	......	.0312	.0485	.0289	.0365	......	......	......	......	......	......	......	......
Power	......	......	......	......	.0103	.0080	.0085	.0089	......	......	......	......	......	......	......	......
Maintenance of equipment	.0497	.0227	.0593	.0484	.0966	.0650	.0969	.0856	......	......	......	......	......	......	......	......
Plant arbitrary	.1100	.1100	.1100	.1100	.1100	.1100	.1100	.1100	......	......	......	......	......	......	......	......
Division expense	.0206	.0308	.0226	.0238	.0524	.0501	.0269	.0434	......	......	......	......	......	......	......	......
Total division cost	$0.3132	$0.3853	$0.4109	$0.3744	$0.7961	$0.6779	$0.6418	$0.7045	......	......	......	......	......	......	......	......
Admin. and general expense	$0.0627	$0.0297	$0.0482	$0.0488	$0.0842	$0.0820	$0.0658	$0.0775	......	......	......	......	......	......	......	......
Total cost	$0.3759	$0.4150	$0.4591	$0.4232	$0.8803	$0.7599	$0.7076	$0.7820	......	......	......	......	......	......	......	......
Preparing foundations, excavation—Quantities—cubic yards	3,614	1,973	2,600	8,187	5,850	10,575	7,530	23,955	4,410	12,789	10,405	27,604	11,990	17,548	8,590	38,128
Drilling	......	......	......	......	$0.3490	$0.1401	$0.1945	$0.2082	$0.6486	$0.3308	$0.5323	$0.4576	$0.5896	$0.3426	$0.3931	$0.4316
Blasting	......	......	......	......	.1712	.2692	.1267	.2005	.1873	.0874	.1176	.1148	.1348	.0762	.1270	.1060
Loading by power	......	......	......	......	.1366	.1253	.1717	.1427	.1795	.1959	.2828	.2260	.1834	.1361	.2337	.1730
Loading by hand	$0.6086	$0.7439	$0.4556	$0.5926	1.1666	.5596	.8112	.7870	1.5536	.4239	.6275	.6811	.5750	.3632	1.0872	.5929
Transportation	......	......	......	......	.2059	.1151	.0607	.1201	.3206	.2682	.1877	.2462	.1487	.1308	.1906	.1499
Tracks (trestles)	......	.0240	......	.0058	......	.0196	.0259	.0168	.2508	.2349	.1196	.1940	.3533	.1667	.1747	.2272
Dumps	......	......	......	......	......	......	......	......	.3799	.0613	.0537	.1093	......	......	......	......
Pumps (power)	......	......	......	......	......	.0021	......	.0010	.0577	.0336	.0342	.0377	.1213	.0545	.0531	.0752
Maintenance of equipment	.0215	......	.0023	.0102	.1549	.1050	.1747	.1391	.1937	.1361	.1198	.1392	*.0104	.0692	.0630	.0428
Plant arbitrary	.1100	.1100	.1100	.1100	.1100	.1100	.1100	.1100	.6300	.6300	......	.3925	.0773	.0800	.0800	.0792
Division expense	.0892	.1009	.0548	.0811	.2749	.1415	.1844	.1875	.2320	.0954	.1158	.1249	.1360	.0740	.1472	.1100
Total division cost	$0.8293	$0.9788	$0.6227	$0.7997	$2.5691	$1.5875	$1.8598	$1.9129	$4.6337	$2.4975	$2.1910	$2.7233	$2.3090	$1.4933	$2.5496	$1.9878
Admin. and general expense	$0.1094	$0.1226	$0.0825	$0.1040	$0.4223	$0.2250	$0.2602	$0.2842	$0.9301	$0.2339	$0.2635	$0.3563	$0.5263	$0.1765	$0.3346	$0.3221
Total cost	$0.9387	$1.1014	$0.7052	$0.9037	$2.9914	$1.8125	$2.1200	$2.1971	$5.5638	$2.7314	$2.4545	$3.0796	$2.8353	$1.6698	$2.8842	$2.3099

Table 3—(*Continued.*)

Items.	Gatun Spillway.				Gatun Locks.				Pedro Miguel Locks.				Miraflores Locks.			
	July.	August	Sept.	Total.	July.	August	Sept.	Total.	July.	August	Sept.	Total.	July.	August	Sept.	Total.
Preparing foundations, filling—Quantities—cubic yards	....	....	....	....	20,296	1,938	....	22,234	....	....	....	....	....	....	....	....
Filling	....	....	....	....	$0.1757	$0.2695	....	$0.1839	....	....	....	....	....	....	....	....
Total cost	....	....	....	....	$0.1757	$0.2695	....	$0.1839	....	....	....	....	....	....	....	....
Masonry.																
Concrete—Quantities—cubic yards	2,232	3,237	4,250	9,719	77,470	77635	69,039	224,144	40,937	50,583	50,243	141,763	3,672	5.755	17,795	27,222
Cement	$1.9271	$1.9014	$1.7680	$1.8490	$1.8961	$1.8947	$1.8359	$1.8771	$ 1.5332	$1.9369	$1.4323	$1.6414	$1.5407	$2.3902	$1.3999	$1.6282
Stone	2.7538	2.7330	2.0280	2.4294	2.3620	2.3486	2.2559	2.3247	.9545	.9360	.8353	.9056	1.0978	.9677	.8434	.9040
Sand	.7679	.7138	.5376	.6492	.7269	1.0152	1.0091	.9137	.2206	.3704	.3700	.3270	.3671	.3827	.3736	.3747
Mixing	.5566	.3264	.2413	.3420	.1325	.1937	.2162	.1790	.1760	.1263	.1351	.1437	1.2084	.9979	.5839	.7557
Total cost	$6.0054	$5.6746	$4.5749	$5.2696	$5.1175	$5.4522	$5.3171	$5.2945	$2.8843	$3.3696	$2.7727	$3.0177	$4.2140	$4.7385	$3.2008	$3.6626
Large Rock—Quantities—cubic yards	284	336	171	791	6,531	8,051	7,681	22,263	527	681	459	1,667	....	275	338	338
Cost	$1.0342	$1.8512	$2.1869	$1.6305	$1.4424	$1.3815	$1.2412	$1.3510	$2.0534	$1.5038	$0.6508	$1.4427	....	....	$0.4036	$0.4036
Masonry—Quantities—cubic yards	2,516	3,573	4,421	10,510	84,001	85,686	76,720	246,407	41,464	51,264	50,702	143,430	3,672	6,030	18,133	27,835
Concrete	$5.3274	$5.1411	$4.3980	$4.8731	$4.7196	$4.9399	$4.7847	$4.8165	$2.8470	$3.3248	$2.7475	$2.9826	$4.2140	$4.5224	$3,1411	$3.5819
Large rock	.1167	.1741	.0846	.1227	.1121	.1298	.1243	.1220	.0261	.0200	.0059	.0168	....	....	.0075	.0049
Wood forms	.5778	.6465	.5235	.5783	.2975	.4154	.4204	.3767	.3491	.2719	.2619	.2907	.5658	.4433	.5637	.5379
Steel forms	....	....	....	....	.0906	.0915	.1114	.0974	.0931	.0775	.0614	.0763	.3549	.1791	.0880	.1429
Placing	.6831	.7612	.6207	.6834	.3155	.2526	.2813	.2830	.3119	.2070	.2492	.2523	.3156	.2117	.3591	.3214
Reinforcements	....	....	....	....	.0209	.0284	.0374	.0287	.0035	.0569	.0684	.0455	....	.0029	.3815	.2492
Pumps	....	....	....	....	.0262	.0483	.0278	.0344	.0577	.0336	.0342	.0408	.1149	.0545	.0531	.0616
Power	....	....	....	....	.0517	.0633	.0645	.0597	.0637	.0642	.0398	.0554	....	.0132	.0116	.0104
Maintenance of equipment	.3616	.4351	.3393	.3772	.1312	.1847	.2895	.1991	.1008	.1294	.1838	.1403	.2407	.0935	.1774	.1676
Plant arbitrary	.6160	.6160	.6160	.6160	.6850	.6850	.6850	.6850	.6646	.6658	.6658	.6655	.4500	.4500	.4500	.4500
Division expense	.2631	.2546	.1501	.2127	.1011	.1145	.1243	.1130	.0865	.0575	.0653	.0686	.1907	.1315	.1080	.1240
Total division cost	$7.9457	$8.0286	$6.7322	$7.4634	$6.5514	$6.9534	$6.9506	$6.8155	$4.6040	$4.9086	$4.3832	$4.6348	$6.4466	$6.1021	$5.3410	$5.6518
Admin. and general expense	$0.3483	$0.3756	$0.3229	$0.3469	$0.1572	$0.2143	$0.2592	$0.2088	$0.2460	$0.2342	$0.2649	$0.2485	$0.7390	$0.4250	$0.4040	$0.4527
Total cost	$8.2940	$8.4042	$7.0551	$7.8103	$6.7086	$7.1677	$7.2098	$7.0243	$4.8500	$5.1428	$4.6481	$4.8833	$7.1856	$6.5271	$5.7450	$6.1045
Back filling—Quantities—cubic yards	3,614	942	2,600	7,156	3,458	18,918	26,410	48,786	3,967	2,360	578	6,905	6,110	6,355	....	12,465
Loading by power	....	....	....	....	....	$0.0049	$0.0519	$0.0300	$0.1522	$0.2892	$0.2171	$0.2044	....	....	....	....
Transportation	....	....	....	....	....	.0119	.0900	.0533	.1129	.1048	....	.1007	$0.1517	$0.0580	....	$0.1040
Tracks	....	....	....	....	$2.8480	.3580	.2382	.4697	.0330	.0645	....	.0410	.0831	.1230	....	.1035
Filling	$0.0023	....	$0.0365	$0.0012	.0042	.1781	.1106	.1293	.0989	.0536	.0461	.0790	.1520	.0253	....	.0874
Maintenance of equipment	....	....	....	....	....	.0054	.0645	.0370	.0390	.0271	.0083	.0324	.0560	.0239	....	.0396
Plant arbitrary	.1100	....	....	.0555	.1100	.0110	.0737	.0519	.1000	.1000	.1000	.1000	.1000	.1000	....	.1000
Division expense	.0003	....	.0043	....	.1632	.0517	.0434	.0551	.0312	.0374	.0199	.0324	.0313	.0143	....	.0226
Total division cost	$0.1126	....	$0.0408	$0.0567	$3.1254	$0.6210	$0.6723	$0.8263	$0.5672	$0.6766	$0.3914	$0.5899	$0.5741	$0.3445	....	$0.4571
Admin. and general expense	$0.0004	....	$0.0066	$0.0005	$0.3344	$0.0933	$0.0860	$0.1064	$0.1210	$0.0881	$0.0445	$0.1033	$0.1215	$0.0346	....	$0.0772
Total cost	$0.1130	....	$0.0474	$0.0572	$3.4598	$0.7143	$0.7583	$0.9327	$0.6882	$0.7647	$0.4359	$0.6932	$0.6956	$0.3791	....	$0.5343

*Indicates a credit.

SOCIAL LIFE OF THE ZONE.

Dancing Parties.

The bachelors living at Corozal gave a dance on Wednesday evening, November 2. A special train was furnished from Balboa to Paraiso, and the attendance was large. A second dance is proposed for the near future.

On Thanksgiving eve there will be a dance at Paraiso in aid of the playground for the village. A committee, under the name of the playground committee, composed of men and women, has been formed, and the arrangements for this dance will be in its hands.

The Daughters of Rebekah, Gorgona, held a reception in honor of Mrs. Leroy Smith at her residence on Friday evening, November 4.

The Gatun Tennis Club has purchased Tungsten lamps and made arrangements to purchase electric current to illuminate the courts at night. Thirty lights of 100 watt power have been installed.

Church Work.

Mr. Bernard N. Baker of Baltimore, president of the Moral Education Board representing a movement in 27 states, will deliver an illustrated lecture at St Luke's Church, Ancon, at 8 o'clock on Sunday night, November 13. The public is cordially invited to be present.

The Gatun Christian League has called to the pastorate of the Union Church in Gatun the Rev. Charles O. Purdy, of the Christian Church of Des Moines, Ia. Mr. Purdy has been appointed Commission chaplain with residence at Gatun. The League was organized at Gatun in 1909, and has a membership of 100. Its activities include the organization and charge of the Union Sunday school and the arranging for services in the chapel. Social affairs held in the chapel are also under the organization.

The annual meeting of the Woman's Altar Guild of St. Luke's Church, Ancon, was held at the home of Mrs. W. C. Gorgas on Tuesday afternoon, November 1, with a large attendance. The election of officers for the ensuing year resulted as follows: President, Miss Beattie; vice-president, Mrs. Charles F. Mason; secretary, Miss Wilhelmina Bryan; treasurer, Mrs. H. C. Hanson. Miss Gorgas was appointed secretary *pro tempore*, owing to the absence from the Isthmus of Miss Bryan. The next meeting of the guild will be held at the home of Mrs. Wesley Owen, on Tuesday, November 15.

The reception given in honor of Chaplain and Mrs. Brown by the members of the Woman's Altar Guild of St. Mark's Church, Culebra, on November 1, was well attended. Selections for violin and cornet were played and refreshments were served.

Masses at the Church of the Holy Redeemer, Culebra, will be at 7.30 and 9 o'clock in the morning.

The United Methodist Church (colored) opened a meeting room on the border line of Ancon and the city of Panama on Sunday, November 6. The Rev. C. M. Anderson is pastor.

Canal Zone Humane Society.

A meeting of the directors of the Canal Zone Humane Society was held at the Hotel Tivoli on Sunday afternoon, November 6. It was decided to petition the head of the Department of Civil Administration for permission to allow the society to erect a sign printed in Spanish and English at the intersection of the Corozal and Sabanas roads, warning drivers against violation of the humane laws. A committee was appointed to complete arrangements for a workhorse parade to be held on Washington's Birthday. It was decided to give an excursion to Taboga for poor children of Panama. In response to a request from the International Humane Society, arrangements will be made for "Mercy Sunday" in the churches of the Canal Zone and Panama, when sermons on humane work will be preached. The Rev. Father Quijano and Archdeacon H. B. Bryan were appointed a committee to arrange the date and other details.

Married.

GODDARD-THOMAS—On November 4, in the Commission chapel, Cristobal, Cora Inga Thomas of Connersville, Ind., to Arthur Joseph Goddard of New York City, the Rev. Carl H. Elliott, officiating. Canal Zone residence, Colon.

OFFICIAL CIRCULARS.

Changes in Ice Orders.

CRISTOBAL, C. Z., November 2, 1910.

To All Concerned—As the Commissary ice waybill closes at 9 a. m. for delivery on the day following, changes in ice orders must reach the order room, building No. 2, Cristobal, before that hour or delivery cannot be made on the following morning.

EUGENE T. WILSON,
Subsistence Officer.

New Rates and Rules for Hotel Tivoli.

CRISTOBAL C. Z., November 9, 1910.

CIRCULAR No. 96-A:

Circular No. 96, effective November 1, 1909, prescribing rates and rules for the Hotel Tivoli, is hereby revoked.

The following rates and rules for the Hotel Tivoli are published, effective November 10, 1910:

RATES FOR ROOM AND MEALS—NONEMPLOYES.

Grade of room.	Number persons in room.	Transient Daily.	WEEKLY.		MONTHLY.			
					First Month.		Second Month.	
			Per day.	Per week.	Daily.	Monthly.	Daily.	Monthly.
1	1	$5.50	$5.00	$35.00	$4.00	$120.00	$3.50	$105.00
1	2	10.00	9.00	63.00	7.00	210.00	6.00	180.00
2	1	5.00	4.50	31.50	3.50	105.00	3.00	90.00
2	2	9.00	8.00	56.00	6.00	180.00	5.00	150.00
3	1	4.50	4.00	28.00	3.25	97.50	2.50	75.00
3	2	8.00	7.00	49.00	5.50	165.00	4.50	135.00

EMPLOYES.

Daily—Same as daily rates for first month nonemployes.

Monthly—Same as monthly rates for second month nonemployes.

Employes' monthly rate for room and meals will not be given without authority from the Subsistence Officer in each case.

Special rates will be made for room and meals for women employes for whom no quarters are provided at Ancon.

RATES FOR ROOM WITHOUT MEALS—NONEMPLOYES AND EMPLOYES.

Guests at "room and meals" rate may be rented second grade rooms for use as parlors at the following rates:

Transient, daily, $3.

Weekly, per day, $2.75; per week, $19.25.

Monthly, per day, $2.50; per month, $75.

EMPLOYES ONLY.

Grade of room.	Number persons in room.	Daily, or for night's lodging only.
1	1	$2.00
1	2	3.00
2	1	1.50
2	2	2.00
3	1	1.25
3	2	1.75

Rooms without meals will not be rented to employes for a longer period than two days, at which time bills will be rendered and collected. No other rates for rooms without meals will be made.

RATES FOR MEALS.

	TRANSIENT.		TABLE BOARD.	
	Nonemployes.	Employes.	Nonemployes.	Employes.
Breakfast.	$0.75	$0.75	$14.00	$ 12.00 per week.
Lunch...	1.00	.75	48.00	45.00 per month.
Dinner...	1.00	.75		

NOTE—At table board no credit will be given for meals not taken.

Meal tickets will be purchased at the office before entering dining room by employes at "room without meals" rate and by all persons without rooms.

RATES FOR MEALS A LA CARTE.

Minimum charge per meal, $1.

This service will supplement the regular service for lunch and dinner.

Guests at "room and meals" rate, as well as all purchasers of regular meal tickest, may order a la carte, not to exceed $1 without additional charge, but when exceeding $1, will be required to pay amount of such excess in cash, or to sign check for same, before leaving dining room.

Children at the $1, or the $1.25 per day rate will pay 25 cents extra for each a la carte meal taken, and, in addition, when bill for such a la carte meal exceeds $1 will pay the amount of such excess.

TEA ROOM SERVICE.

Hours—3 to 6 p. m. Minimum charge, 25 cents.

An extra charge of 25 cents per day per person will be made for grade 2 rooms en suite with grade 1 rooms with bath.

FAMILIES OR PARTIES AT "ROOM AND MEALS" RATE OCCUPYING A GRADE 2 ROOM EN SUITE WITH A GRADE 1 ROOM.

NO. OF PERSONS.*	CHARGE.
Two...........	One in grade 1 One in grade 2 En suite charge for one, 25 cents.
Three..........	One in grade 1 Two in grade 2 En suite charge for two, 50 cents.
Four...........	Two in grade 1 Two in grade 2 En suite charge for two, 50 cents.

*Not including children under 12.

If in any of the three above mentioned groups one of the persons is a nurse or servant, the nurse or servant will be considered located in the grade 1 room and be charged two-thirds the regular rate for same. An extra charge of 25 cents will be made for breakfast served in room and an extra charge of 50 cents for lunch or dinner.

Two in a room is ordinarily the full capacity of grade 1 and grade 2 rooms, but if it be necessary for more than two persons to occupy a room temporarily, the charge for each additional person will be $4.50 for grade 1 rooms, $3.75 for grade 2 rooms, and $3 for grade 3 rooms. Grade 3 rooms will ordinarily not be rented to more than one person by day or week.

The rate for servants when occupying room will be two-thirds the regular rate; when occupying cot in room or bath room, or in regular servants' quarters, one-half the usual rate for grade 3 room.

The rate for children under twelve when occupying room with parents or nurse and requiring no extra bed, but old enough to occupy seat at table, will be a flat rate of $1.25 per day for daily rate and $1 per day for weekly or monthly. Over twelve years of age, full rates will be charged. An extra charge of 50 cents per day per cot or bed will be made for children where a cot or extra bed is required in room with parents or nurse.

In case a room is occupied by one or more children under 12, without nurse or other person over 12 in room, a room charge per room will be made as follows:

NONEMPLOYES.

Grade of room.	Transient Daily.	WEEKLY.		MONTHLY.			
				First Month.		Second Month.	
		Per day.	Per week.	Per day.	Per month.	Per day.	Per month.
1	$2.25	$2.00	$14.00	$1.50	$45.00	$1.25	$37.50
2	2.00	1.75	12.25	1.25	37.50	1.00	30.00
3	1.75	1.60	11.20	1.15	34.50	.75	22.50

EMPLOYES.

Daily—Same as daily rates for first month nonemployes.

Monthly—Same as monthly rates for second month nonemployes.

Employes' monthly rates will not be given without authority from the Subsistence Officer.

Children under twelve will not be put alone in a grade 1 room unless parent or nurse, or another child of family over twelve occupies grade 2 room en suite. Whenever there are more than one person over 12 in a suite, the "families or parties" rate for suites applies.

The "per room" charge for rooms occupied by children under 12, is in addition to regular charge for children, and in addition to any charge made for extra bed or cot, or any en suite charges.

Employes will be required to pay bills at time of leaving in coupons. If properly identified as employes to the satisfaction of the manager, bills may be paid in currency. Persons at "room and meals rate" must pay for all meals, unless one day's meals, or more, are missed consecutively, in which case notice must be given to the clerk in advance, in order to secure credit. Credit for meals will be allowed to nonemployes at the rate of $2.50 per day on daily rates and at the rate of $2.25 per day on weekly rates, and to employes at the rate of $2 per day on daily rates.

If rooms be occupied by the month and guests are absent, credit will not be given for the room. If absence is for one full week, credit will be allowed for meals from the full monthly rate at the rate of $1.50 per day for first month nonemployes, and $1,25 per day for employes authorized to stay at the Hotel Tivoli by the month and for second month nonemployes. Notice must be given to the clerk in writing or in person, in advance, to secure credit.

When one day's meals, or more, are missed consecutively and required notice given in advance, children under 12 will be given credit for meals at rate of 75 cents per day and servants at rate of $1 per day.

Open accounts will not be permitted. Guests will be required to pay their bills upon leaving. Accounts of transient employes unpaid at time of leaving will be made up at the proper nonemployes' rate and sent to the Examiner of Accounts. Weekly bills will be rendered when due. Monthly bills will be made up on the 7th, 14th, 21st and last day of the month. All bills are due and payable upon presentation. No variations from this rule will be made without authority from the Subsistence Officer.

The weekly rate does not apply unless stay has been for a full week and the monthly rate does not apply unless stay has been for a full month. And since bills are made up once a week, the weekly bills of nonemployes who have expressed their intention of staying at the Tivoli by the month will be made out during the first month at weekly rates and proper correction will be made at the end of first month's stay, and the weekly bills of employes authorized to stay at the Hotel Tivoli by the month will be made out during the first month at the first month nonemployes' rate and proper correction will be made at the end of first month's stay.

SPECIAL RATES.

Delegations from business mens' clubs and other organizations, or special parties visiting the Canal will be given the following rates:

For parties of 10 or more, and less than 25: For less than 5 days, weekly rates; for 5 days or more, employes' rates. For parties of 25 or over: Employes' rates.

No employe of the hotel has authority to make any other rates or to modify any of the foregoing rules.

EUGENE T. WILSON, *Subsistence Officer.*

Paraiso Station Discontinued.

PANAMA RAILROAD COMPANY,
OFFICE OF GENERAL SUPERINTENDENT.
COLON R. P., November 4, 1910.

CIRCULAR No. 247:

To All Concerned:—Effective this date, the nonagency station at Paraiso Junction will be discontinued, and all freight hereafter for that place will be billed to Pedro Miguel.

J. A. SMITH,
General Superintendent.

Contract for Clearing Trails.

MOUNT HOPE C.Z., October 25, 1910.

Bids will be received at the office of the Purchasing Agent on the Isthmus, Isthmian Canal Commission, Mount Hope, C. Z. up to 2.30 p. m., Monday, November 14, 1910, at which time they will be opened in public, for clearing the Arraijan-Rio Grande trail from the Canal Zone boundary to a point on the Panama railroad, 600 feet below the Rio Grande dam, a distance of about seven (7) miles; and for clearing the Arraijan-Paraiso trail from the Canal Zone boundary line to the Panama railroad, a distance of about six (6) miles; and also for clearing the Arraijan-Cochinito trail from the Canal Zone boundary line, south of Arraijan, to the village of Cochinito, in the Canal Zone. The work shall be done in accordance with specifications to be had upon application to the Superintendent of Public Works, I. C. C., Administration Building, Panama. Proposals may be made for the clearing of each trail separately, or for the three. The successful bidder will be required to furnish bond or cash deposit in the amount of $25 for each trail as a guarantee that the work will be carried out. Proposals should be enclosed in sealed envelopes, marked "Proposals for clearing Arraijan-Rio Grande, Arraijan-Paraiso and Arraijan-Cochinito trails." The Commission reserves the right to reject any and all bids, to accept any bid as may be deemed to its interest, and to waive defects and informalities in proposals.

CHARLES L. PARKER,
Purchasing Agent on the Isthmus.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Ghristian Association.

CULEBRA.

The discussion club will meet on Thursday evening of this week under the leadership of A. A. Nellis; subject, "Thrift."

The duckpin tournament will open on November 15. Men wishing to join should hand their names to Mr. Dougherty.

A smoker has been arranged for on November 18.

The standing in the handicap billiard tournament i as follows:

Name.	Handicap	Won.	Lost.
French	60	6	2
Conlan	100	5	0
Silver	40	3	3
Dubois	100	3	1
Case	60	2	1
Kaufman	60	1	3
Thomson	90	1	4
Koperski	60	0	5
McCann	70	0	2

The following are the men who have bowled over 200 during the week: Dougherty, 226, 203, 200; Fox, 225, 203; Cornthwaite, 201; Cohen, 212.

The men having the highest average during the week and the scores are: Cohen, 3 games, average 184; Hill, 1 game, average, 181; Dougherty, 17 games, average, 170⅓.

EMPIRE.

Empire's first team took three straight games from the Cristobal bowling team last Saturday evening. Score were as follows:

Cristobal.				Empire.			
Bullard	178	226	171	Gorham	156	187	173
Rabbitt	169	158	166	Potter	184	212	170
Collins	186	141	162	Shaughn's'y	140	169	173
Adams	118	170	126	Pearson	179	167	175
Thomas	138	171	146	Huson	202	161	172
Total	789	866	771	Total	861	896	863

The following high scores were bowled last week: Edwards, 211, 201; Shaughnessy, 206; Sawtelle, 206; Gustavson, 229; Bardelson, 218.

Gymnasium classes will be continued on Tuesdays and Thursdays.

A meeting of representatives of all the official, social and religious organizations in Empire will be held on Thursday evening, November 10, for the purpose of making plans for the Christmas celebration for the benefit of the children of Empire.

GORGONA.

On Monday, October 31, a dramatic club was organized with E. W. Mitchell, as manager, and E. L. Emery, stage manager. Parts were assigned for a play and one rehearsal has been held.

R. G. Goodman led the discussion club on Tuesday night; subject, "What Is Happiness?" The club has proved interesting and leaders are being assigned for the month of November.

On Thursday, November 3, the Gorgona ladies' bowling team took one game out of three from a team composed of the night men. Thursday, November 10, they go to Empire as the guests of the Empire ladies to bowl. Mrs. Corcoran rolled 241 last week, which is the highest score ever made by a lady on the Isthmus.

Two hundred scores at bowling for the past week were made as follows: Mrs Corcoran, 201, 241; Arnold, 209, 201, 204; Humprey, 212; Witmer, 208; White, 238; Stewart, 225.

For the most games with a score of over 140 during the month of November a prize of one pair of high top bowling shoes is offered. The high score prize is a silver medal.

Gatun's second team took two out of three games from the Gorgona second team on Saturday night. Scoies were as follows:

Gatun.				Gorgona.			
Dalton	225	189	184	Stoehr	148	126	174
Harrington	165	154	155	Arnold	161	162	175
Myers	158	158	126	Montg'm'y	146	134	152
Wilson	166	175	172	M.Var'k'p.	137	154	170
Hodges	150	155	152	Bordt	180	156	171
Total	864	831	789	Total	772	732	842

Next Saturday night the third game of the basketball league will be played on the home floor against Culebra. Culebra will also send her first bowling team for the ast game of the preliminaries with the local first team.

GATUN.

Four hundred people attended the entertainment by the Empire Musical and Dramatic Society on Wednesday evening, November 2.

The Spanish class will hold its first meeting this week. It is hoped that a large number of the people of Gatun will avail themselves of this opportunity to learn the language. For tuition fees and other information see the secretary.

The Culebra Y. M. C. A. has donated 100 of its books to the Gatun Y. M. C. A. library.

Emphasis is being placed on the increasing of the membership during the month of November. Eleven new members were added during the first six days.

A general meeting of the various organizations in Gatun will be called in the near future to make arrangements for the community Christmas celebration.

The Gatun team defeated the Empire five at basketball on the local floor by the score of 37 to 22 last Saturday night. The line-up was as follows:

Empire.	Position.	Gatun.
Myers, Moore	Forward	R. Porter
Eason	Forward	F. Huber
Bartholomew	Center	C. Porter, Eggleston
Seaton	Guard	J. Mitchell
King	Guard	G. Connor.

Next Saturday the Gatun five will meet the Cristobal team at Cristobal. These teams are tied for first place in the league.

The local first bowling team was defeated by Gorgona, losing two out of three games in last Saturday's match. Following are the scores:

Gatun.				Gorgona.			
Ponton	167	150	146	Roper	186	162	170
Severn	155	139	148	Stewart	163	145	151
DeMoll	192	154	155	Otis	185	155	198
Wolf	171	136	144	Haldeman	155	185	149
Durand	136	167	213	White	128	200	152
Total	821	746	806	Total	817	847	820

Next Saturday will complete the preliminaries in the bowling tournament. Cristobal's second team will play Gatun's second team on the Gatun alleys.

There is still time to join the local handicap duckpin tournament. All wishing to enter the tournament are requested to see Mr. DeMoll.

John J. Lucky won the prize for high tenpin score for the month of October.

H. H. Hodges is acting assistant bowling manager during the absence of Mr. Barte.

Chas. Ourand won first prize in the October pool tournament. The three cushion billiard tournament closes this week.

CRISTOBAL.

Thursday, November 3, was celebrated at the Cristobal clubhouse with an all day "open house," together with a boys' gymnasium class in the afternoon, basketball game and bowling match in the evening, and a concert by the orchestra from the *Prinz August Wilhelm.*

Cristobal defeated Gorgona in the league basketball game Saturday night by the score of 22 to 10. The line-up and summary follow:

Gorgona.	Position.	Cristobal.
Sonnenberg	Forward	Prather
Ridge	Forward	Luce
Swanson, Capt	Center	Vifquain
Earl	Guard	Weller, Capt.
Simka, Stripling	Guard	Pring

Summary—Goals, Sonnenberg, 1; Swanson, 1; Prather, 1; Luce, 4; Vifquain, 4; goals from fouls, Ridge, 2; Simka, 3; Stripling, 1; Prather 4; fouls, Sonnenberg, 1, Ridge, 1; Swanson, 4; Simka, 2; Stripling, 1; Prather, 3; Luce, 2; Vifquain, 1; Weller, 4; Pring, 1;.

The standing of the basketball league at present is as follows:

Team.	Won.	Lost.	Per cent.
Cristobal	3	0	1000
Gatun	2	0	1000
Empire	1	2	333
Culebra	0	2	000
Gorgona	0	2	000

The bowling match on the local alleys on Saturday resulted in favor of Empire. The scores were:

Empire.				Cristobal.			
Gustavson	192	156	201	Barrett	211	183	128
Sawtelle	129	175	156	Blackburn	150	169	104
Goolsby	156	179	168	Turner	130	142	168
Leon	200	168	171	Howard	159	155	133
Bardelson	171	169	174	Weston	172	164	167
Total	848	847	870	Total	822	813	700

The following 200 and over scores were made during the week: Barrett, 200, 225, 209, 211; Bullard, 212, 200; Rabbitt, 210, 202; Herrington, 212; Rigney, 203; Collins, 201; Hess, 203.

On Saturday, November 12, the boys' department will take an all-day outing to Toro Point.

The meeting of the Cristobal Dramatic Club Wednesday night will be rendered interesting by selections from several members who have volunteered. The following will take part this week: Messrs. Shradley, Manley, Sexton and Henriquez.

Bids for an Addition to Recreation Hall, Corozal.

Sealed proposals, for labor (exclusive of plumbing and painting) only, will be received at the office of the Constructing Quartermaster, Culebra, C. Z., until 3 p. m., November 12, 1910, and then opened, for the erecting of an addition to the recreation hall at Corozal by contract. Plans and specifications can be obtained from the Constructing Quartermaster by making a deposit of $5. Fifty dollars must be deposited with the proposal and $150 when the contract is signed.

C. A. DEVOL, *Chief Quartermaster.*

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company, of the Royal Mail Steam Packet Company, of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Colon	P. R. R.	Friday	Nov. 5
Advance	P. R. R.	Thursday	Nov. 10
Panama	P. R. R.	Wednesday	Nov. 16
Allianca	P. R. R.	Tuesday	Nov. 22
Colon	P. R. R.	Monday	Nov. 28

CRISTOBAL TO NEW YORK.

Allianca	P. R. R	Thursday	Nov. 10
Cristobal	P. R. R.	Friday.	Nov. 11
Colon	P. R. R.	Wednesday	Nov. 16
Advance	P. R. R.	Tuesday	Nov. 22
Panama	P. R. R.	Monday	Nov. 28
Allianca	P. R. R.	Sunday	Dec. 4
Colon	P. R. R.	Saturday	Dec. 10

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 4th and 25th of each month. Due notice of the sailings ot these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Metapan	U. F. C.	Thursday	Nov. 3
Prinz Joachim	H.-A.	Saturday	Nov. 5
Zacapa	U. F. C.	Thursday	Nov. 10
Magdalena	R.-M.	Saturday	Nov. 12
Almirante	U. F. C.	Thursday	Nov. 17
Prinz Aug. Wilhelm	H.-A.	Saturday	Nov. 19
Santa Marta	U. F. C.	Thursday	Nov. 24
Clyde	R.-M.	Saturday	Nov. 26
Metapan	U. F. C.	Thursday	Dec. 1
Zacapa	U. F. C.	Thursday	Dec. 8
Atrato	R.-M.	Saturday	Dec. 10
Almirante	U. F. C.	Thursday	Dec. 15
Santa Marta	U. F. C.	Thursday	Dec. 22
Tagus	R.-M.	Saturday	Dec. 24

COLON TO NEW YORK.

Santa Marta	U. F. C.	Friday	Nov. 11
Clyde	R.-M.	Monday	Nov. 14
Sarnia	H.-A.	Tuesday	Nov. 15
Metapan	U. F. C.	Thursday	Nov. 17
Prinz Joachim	H.-A.	Tuesday	Nov. 22
Zacapa	U. F. C.	Thursday	Nov. 24
Atrato	R.-M.	Monday	Nov. 28
Almirante	U. F. C.	Thursday	Dec. 1
Prinz Aug. Wilhelm	H.-A.	Tuesday	Dec. 6
Santa Marta	U. F. C.	Thursday	Dec. 8
Tagus	R.-M.	Monday	Dec. 12
Metapan	U. F. C.	Thursday	Dec. 15
Zacapa	U. F. C.	Thursday	Dec. 22
Oruba	R.-M.	Monday	Dec. 26

NEW ORLEANS TO COLON.

Atenas	U. F. C.	Saturday	Nov. 5
Turrialba	U. F. C.	Saturday	Nov. 12
Abangarez	U. F. C.	Saturday	Nov. 19
Atenas	U. F. C.	Saturday	Nov. 26
Turrialba	U. F. C.	Saturday	Dec. 3
Abangarez	U. F. C.	Saturday	Dec. 10

COLON TO NEW ORLEANS.

Abangarez	U. F. C.	Thursday	Nov. 10
Atenas	U. F. C.	Thursday	Nov. 17
Turrialba	U. F. C.	Thursday	Nov. 24
Abangarez	U. F. C.	Thursday	Dec. 1
Atenas	U. F. C.	Thursday	Dec. 8
Turrialba	U. F. C.	Thursday	Dec. 15

COLON TO BARBADOS, CALLING AT TRINIDAD.

Magdalena	R.-M.	Tuesday	Nov. 22
Clyde	R.-M.	Tuesday	Dec. 6
Atrato	R.-M.	Tuesday	Dec. 20

The next sailing of the Leyland Line will be as follows: *Louisianian*, on or about November 13, for New Orleans, via Kingston, Ja.

Hamburg-American steamers leave for New York at 10 a. m., and for Port Limon every Tuesday or Wednesday.

Royal Mail steamers leave for New York on alternate Mondays at 5 p. m., for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans leave on Thursday at 3 p. m., and for New York, beginning November 17, on Thursday at 11 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3rd and 20th of each month.

LOST—Gold watch chain and small gold bell charm, on Saturday afternoon between P. R. R. train and Cristobal hotel. Suitable reward to finder.

M. HERZ, Mount Hope.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, NOVEMBER 16, 1910. No. 12.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Cost of Canal Construction.

Exhibits showing the cost of excavation in the Canal prism and of rock and sand production are published elsewhere in this issue of THE CANAL RECORD. They supplement exhibits published last week, showing the cost of Canal construction, and the unit cost of lock and dam construction.

Rainy Season Record in Culebra Cut.

The excavation in Culebra Cut during the month of October—1,323,846 cubic yards—was the greatest accomplished during any October since the inception of the work. The records since 1907 were as follows:

OCTOBER.	Excavation	Rainfall.
	Cu. Yds.	*Inches.*
1907	834,499	15.44
1908	1,160,101	8.87
1909	1,302,901	21.14
1910	1,323,846	12.57

Culebra District Steam Shovels.

Twenty shovels, all of the 200-class, excepting one, working in the Culebra construction district of the Central Division on November 11, excavated 30,077 cubic yards of rock and earth, an average of 1,503 cubic yards per shovel for the 8-hour working day. This is the highest output for a single day ever made in the Culebra district. The shovels were under steam 160 hours, actually digging 109 hours, and waiting for cars 38 hours and 40 minutes. The rest of the time was lost in mining, cleaning track, repairing shovel, repairing track, moving shovel back from slide, etc.

Canal Work in October.

The grand total of Canal excavation in October was 2,884,382 cubic yards, of which 2,784,994 cubic yards were charged to "work excavation" and 99,388 cubic yards to "plant." The dry excavation amounted to 1,773,580 cubic yards and was principally by steam shovels. The dredges removed 1,110,802 cubic yards in addition to the amount pumped into Gatun Dam by suction dredges. The progress on the locks at Gatun, Pedro Miguel and Miraflores is referred to elsewhere in this issue.

In the Atlantic Division, the total excavation was 731,721 cubic yards. Of this total, 153,142 cubic yards were dry excavation and the remainder was removed by the dredges in the Atlantic entrance.

The total excavation in the Central Division was 1,602,255 cubic yards.

In the Pacific Division, the total excavation was 550,406 cubic yards, 467,873 cubic yards of which were taken out by the dredges at the Pacific entrance.

A detailed statement of the excavation and a summary of the work on the locks and dams follow:

ATLANTIC DIVISION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation
Dry excavation—	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*
Locks, Dam and Spillway	118,327	34,815	153,142
Mindi	....	....	....
Total	118,327	34,815	153,142
Wet excavation—			
Atlantic entrance	549,788	28,791	578,579
Locks, Dam and Spillway	....	....	....
Total	549,788	28,791	578,579
Total wet and dry excavation	668,115	63,606	731,721

CENTRAL DIVISION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation
All dry excavation—			
Culebra Cut	1,320,314	3,532	1,323,846
Chagres section	271,409	7,000	278,409
Obispo Diversion	....	....	....
Total	1,591,723	10,532	1,602,255

PACIFIC DIVISION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation
Dry excavation—			
Locks, Dams and Spillways	17,283	900	18,183
Diversions	....	....	....
Prism, south of Pedro Miguel Locks	....	....	....
Total	17,283	900	18,183
Wet excavation—			
Pacific entrance	467,873	24,350	492,223
Miraflores Locks	40,000	....	40,000
Diversions	....	....	....
Total	507,873	24,350	532,223
Total wet and dry excavation	525,156	25,250	550,406

TOTAL CANAL EXCAVATION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation
Dry excavation	1,727,333	46,247	1,773,580
Wet excavation	1,057,661	53,141	1,110,802
Total	2,784,994	99,388	2,884,382

Mean rainfall along Canal (eleven stations) 14.39 inches.

By "Work" Excavation is meant excavation actually made for one of the constituent parts of the Canal, such as Prism, Diversions, or Locks etc.; that is it represents material taken from the area to be occupied by the Canal, and constitutes excavation useful for the completed Canal.

By "Plant" Excavation is meant excavation outside of any of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc. It includes material necessary to be excavated for construction purposes only and is chargeable against the particular plant item for which it is performed, sucb as Prism, Diversions, Locks, etc.

DAM AND LOCK CONSTRUCTION.

MATERIAL.	Atlantic.	Pacific.	Total.
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*
Fill placed in dams	740,351	54,370	794,721
Concrete laid in locks	86,949	83,581	170,530
Concrete laid in dams and spillways	7,415	....	7,415

Slides in Culebra Cut.

A portion of the north shoulder of Contractor's Hill broke away from the hill about 7.45 o'clock on the morning of November 14 and moved rapidly into Culebra Cut. Steam shovel No. 208 was caught, but not damaged; six well drills were wrecked, and about 200 feet of the west main track were covered. It is estimated that about 15,000 cubic yards of material are in motion.

A slide in the rock bank of the Cut, opposite the division office at Empire, showed signs of activity on November 12, and steps were taken at once to reinforce the Obispo diversion ditch by making a rock and clay fill within the ditch on the side nearest the Canal. A break in the east bank of the Cut, near the suspension bridge at Empire, threatens to carry away part of the new Empire-Paraiso highway. About 60,000 cubic yards of rock and earth are in motion here.

There have been no new developments in the slides at Culebra, Cucaracha, and other points during the week except, that on the west bank of the Canal at the south end of Contractors' Hill a crack has appeared which may involve a considerable quantity of rock and earth. The total amount of material in motion in all the slides is within the estimated amount of excavation remaining to be done, as published elsewhere in this issue of THE CANAL RECORD.

Balboa Notes.

Wash borings have been made on the site of the proposed Panama railroad lumber dock at Balboa. They show rock at a depth of from 65 to 70 feet. The overlying material consists of successive strata of clay, sand, and gravel.

Information has been received that work on the boilers and steam-fittings of the new Pacific Division ladder dredge, the contract for which was let in August of this year to a firm in Renfrew, Scotland, has been temporarily interrupted by a strike among the boilermakers. The dredge will be known as the *Corozal*.

Work is in progress on the coffer-dam across the old channel of the Rio Grande, which is designed to impound the water and form a sump for the pumping station of the hydraulic plant, south of Miraflores Locks. The method employed is to drive two rows of sheet piling, one on the upper and one on the lower side of a structure of round piling. The labor of sinking the sheet piling is performed

NOTES OF PROGRESS.

(*Continued.*)

partly by means of a windlass, operated by manpower, which raises a heavy block of wood and then lets it fall; and partly by direct hand work, according as the workmen desire a change. The earth fill will be made with material excavated from the Canal prism, which will be brought to the site by clapets, thence lifted into place by a clam-shell bucket.

The ladder of the old French dredge, *No. 9*, stranded on the bank of the Chagres River between Gorgona and Mamei, has been removed by workmen from the Balboa shipways. This dredge has been a landmark to travelers over the Panama railroad for several years, and was carried to its present position during a freshet. At a normal stage of the river, the dredge is high and dry, but during the period of floods, it is partly submerged, and the high water of December, 1909, nearly covered it. The Central Division steam shovels, now working in this section, have recently excavated all around it. The hull of the dredge is in fair condition, and will probably be left where it is until the Gatun lake region is flooded, when it will be raised and towed out of the channel.

Steam Shovel and Dredgemen.

The regular meeting of the I. B. of S. S. and D. M. will be held in the I. C. C. lodge hall, Empire, Sunday, November 20, at 12.15 p. m. It is very important that all brotherhood men attend this meeting. Officers will be elected for the year 1911. WALTER P. TUDOR,
Secretary and Treasurer.

Empire, C. Z., November 10, 1910.

Civil Service Examination for Anæsthetist (female).

The United States Civil Service Commission announces an examination on November 30, 1910, to secure eligibles from which to fill a vacancy in the position of anæsthetist (female), Philippine General Hospital, at $1,800 per annum, without board and quarters, and vacancies requiring similar qualifications as they may occur in the Philippine Service.

It will not be necessary for applicants to appear at any place for examination. Their eligibility for the position will be determined upon the evidence furnished in examination Form 375 concerning their education, training, and experience.

Applicants are desired to have had at least one year's experience in the administration of general anæsthetics in institutions for the care of the sick.

Applicants must have reached their eighteenth birthday, but not their fortieth birthday, on the date of their examination.

The medical certificate in Form 2 must be filled in by some medical officer in the service of the United States, who should indicate his rank or official designation on such certificate.

Each applicant will be required to submit with her application a photograph of herself, taken within three years, which will be filed with her examination papers as a means of identification, in case she receives appointment. An unmounted photograph is preferred. The name and date of examination, the competitor's name, and the year in which the photograph was taken should be indicated on the photograph.

This examination is open to all citizens of the United States who comply with the requirements.

This announcement contains all information which is communicated to applicants regarding the scope of the examination, the vacancies to be filled, and the qualifications required.

Applicants should at once apply to the Secretary, Isthmian Civil Service Board, Culebra, C. Z., for Forms 2 and 375.

CONCRETE WORK IN PACIFIC DIVISION LOCKS.

The concrete work in the locks at Pedro Miguel is about 48 per cent completed, 400,948 cubic yards out of a total of 837,400 having been laid at the close of work on November 12. All daily records for laying concrete were broken on Wednesday, November 9, when the plants at Pedro Miguel and Miraflores mixed and placed 4,030 cubic yards, thereby exceeding the previous best record on the Isthmus, that at Gatun Locks on June 6, 1910, by 32 cubic yards. The operated plant at Pedro Miguel on this date consisted of six 2-yard mixers, four in the construction plant and two in the auxiliary plant; that at Miraflores consisted of two 2-yard, three ½-yard and one ⅓-yard mixers. Reducing these to a common unit, a total of 58.29 mixer hours were worked, an average of 6.03 hours per mixer, the total output representing an average of 69.14 cubic yards an hour per 2-yard mixer. The amount of concrete placed during the week in both locks—22,491 cubic yards—is the best record made so far at these points, and exceeds the previous best Isthmian record for one week, that made at Gatun Locks, June 19-25, inclusive, by 808½ cubic yards.

Work on the center and side walls at the Pedro Miguel Locks has been extended south as far as the end sill and T-culvert. Between 300 and 400 feet of the side walls remain to be constructed before the wing sections are reached, and about the same distance of center wall to the point where it ends. The concrete in the floor of the lock south of the end sill has not yet been laid, but the wall construction will proceed in advance of it, leaving the floor work to a later date. Two hundred feet are yet to be added to the south guide wall, about 100 feet to each end, making the total length of the wall when completed, 1,200 feet. Practically all the iron work for the end sill is set, and as this section is out of reach of the chamber cranes, the concrete used there is supplied by the auxiliary mixer on the east bank and placed by derrick and locomotive crane. Excavation for the extension of the east wall, north into the forebay, is completed, and the concrete work at that point is well under way. Similar excavation for the extension of the west wall is in progress.

The record of concrete placed during each of the six 8-hour working days of the week ending November 12, follows:

PEDRO MIGUEL.

DATE.	CONSTRUCTION PLANT. 2-Cubic yard mixers.			AUXILIARY PLANT. 2-Cubic yard mixers.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu Yds.*			*Cu. Yds.*	*Cu. Yds.*
November 7	1,976	22:00	4	532	11:50	2	19	2,527
November 8	2,110	27:34	4	548	13:00	2	22	2,680
November 9	2,304	28:33	4	672	14:50	2	14	2,990
November 10	2,336	30:00	4	576	11:50	2	7	2,919
November 11	2,076	25:00	4	610	13:00	2	17	2,703
November 12	2,118	25:17	4	690	15:00	2	29	2,837
Total	12,920	157:84	4	3,628	78:50	2	108	16,656
Previously reported	....	....	......	....	....	......	3,585	384,292
Grand total	....	....	......	....	....	......	3,692	400,948

MIRAFLORES.

Concrete work in the upper lock at Miraflores is at present confined to the floor and culvert system and the east side wall. Mixer No. 6, engaged on the culvert work dumping directly into place, established a new daily record for ½-yard mixers on November 11, when it produced 223 cubic yards in 7½ mixer hours. The previous best record, made by the same machine, was 190 cubic yards in 7½ mixer hours. The smallest mixer in these locks, a ⅓-yard machine, recently returned from shop, made an unusual record on November 10 by producing 133 cubic yards of concrete in 8.50 mixer hours. equivalent to 399 mixings during the day's run.

The record of concrete placed in the upper lock at Miraflores during the six 8-hour working days of the week ending November 12, follows:

DATE.	AUXILIARY PLANT.										Total.
	2-Cubic yard mixers.			½-Cubic yard mixers.			⅓-Cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*						*Cu. Yds.*	*Cu. Yds*
Nov. 7	516	9:00	2	397	21:50	3	42	4:50	1	25	980
Nov. 8	480	8:50	2	422	22:78	3	68	6:00	1	33	1,003
Nov. 9	464	7:33	2	447	24:50	3	74	6:00	1	55	1,040
Nov. 10	502	8:50	2	360	20:67	3	133	8:50	1	32	1,027
Nov. 11	422	8:00	2	346	15:17	3	105	7:00	1	29	902
Nov. 12	456	8:00	2	322	18:00	3	68	4:00	1	37	883
Total	2,840	49:33	2	2,294	122:62	3	490	36:00	1	211	5,835
Previ'usly reported	....	....	....	....	....	....	....	....	......	1,304	54,871.5
Grand total	....	....	....	....	....	....	....	....	......	1,515	60,706.5

WOMEN'S CLUBS.

Federation and Club Work—Christmas Gifts.

A meeting of the executive board of the Canal Zone Federation of Women's Clubs and a conference of presidents was held at Hotel Tivoli, Ancon on Tuesday, November 8, the main business of the day being to arrange for the mid-season convention. It was decided to hold this convention at Hotel Tivoli on a date after January 15 to be determined hereafter. There will be two sessions, the business meeting in the morning, and in the afternoon, addresses and music, followed by an informal reception. Invitations will be issued, and all club-women are expected to attend.

The pictures in the Federation art collection have been numbered, classified, and catalogued by Mrs. M. E. S. Smith of Empire. A copy of this catalogue will be forwarded to each club to assist in the preparation of the program of the "Art Exhibit Day" for which each club is urged to arrange.

The philanthropy committee solicits subscriptions for the Christmas box for the patients in the leper asylum at Palo Seco. For the past two years the Federation has provided a box containing personal gifts for each of the 38 inmates of the institution, and the response to the appeal this year is not less generous than it has been heretofore.

Mrs. A. O. Herman has been designated chairman of the educational committee in the the place of Mrs. J. A. Storla, resigned. The president of the Federation, Mrs. Thomas E. Brown, sailed on the *Allianca* on Thursday, November 10, for a short visit in New York. The Federation will tender a farewell reception to Mrs. Lorin C. Collins, on Saturday afternoon, November 26, at the Commission clubhouse in Cristobal, the Cristobal Woman's Club entertaining.

The Gatun Woman's Club met in the Commission clubhouse on Friday, November 11. The club library will be opened for the distribution of books after December 1. The club will cooperate with the Sunday school in the Christmas entertainment for the children. A number of pictures will be purchased and presented to the school at Christmas. The social meeting will be omitted this month and the club will hold its next business session on Friday, December 9.

The business meeting of the Pedro Miguel Club was held on Wednesday, November 9. A committee was appointed to cooperate with the Sunday school in the Christmas entertainment. It is proposed to begin a short course of study of the history of Panama, and papers on current events will be read at each business meeting, followed by a discussion.

Suicide of I. C. C. Employe in Colon.

Dexter Tate, an American, employed in the Depot Quartermaster's storehouse at Mount Hope, committed suicide by shooting himself in the head with a rifle in a room, near the corner of Fifth and Bolivar streets in Colon, on the morning of November 14. He was 43 years of age and arrived on the Isthmus July 12, 1905. His legal residence was in Escambia County, Florida. A brother, Sterret Tate of 17–21 William street, New York City, survives him.

Kangaroo Ball.

Cristobal Court, No. 8, I. O. P. K. will hold their second annual ball at the Imperial Hotel, in Colon, on Thanksgiving Eve, November 23.

All Kangaroos in good standing are cordially invited to attend. A special train will be run from Panama, making all stops, in accordance with the following schedule: Leave Panama, 7; Corozal, 7.08; Pedro Miguel, 7.18; Culebra, 7.30; Empire, 7.35; Las Cascadas, 7.40: Bas Obispo, 7.45; Gorgona, 7.55; San Pablo, 8.10; Tabernilla, 8.15; Gatun, 8.40; arrive Colon, 8.55. Returning, the train will leave immediately after the ball Invitations can be obtained from the comptrollers of the respective courts.

C. D. Hoffman, *Secretary*.

Colon, R. P., November 7, 1910.

President Taft's Visit.

President Taft and his party arrived on the Isthmus on the morning of November 14. They were met at Cristobal by the Isthmian Canal Commission and officials of the Panamanian Government, and were taken by special train to Culebra. On the morning of Tuesday, November 15, the President and his party were taken by special train to Gatun, where they made a thorough inspection of the locks and dams, returning to Culebra on the relocated line of the Panama railroad in the afternoon. In the evening the President, accompanied by Col. Goethals, went to Paraiso, where he addressed a meeting of Canal employes under the auspices of the Canal Zone branch of the Red Cross and the Y. M. C. A. On Wednesday morning a trip by special train was made through Culebra Cut; and in the afternoon, the President will receive delegations of employes. In the evening he will attend a banquet in Panama tendered by the President of the Republic. On Thursday, he will make a trip over the locks and other work in the Pacific Division, returning to Colon in time to board the *Tennessee* before nightfall.

Caught in Slide at Gatun Locks.

Shortly before 5 o'clock on the afternoon of November 9 a part of the bank in the south forebay of the locks at Gatun, where a gang was excavating for the east wing wall, caved in. The bank had been caving slowly all the afternoon, but about 4.40 o'clock the movement became rapid. The workmen were warned, but in running to escape, Mateo Rodriguez stumbled, fell, and was covered with earth. He was smothered before he could be dug out. The moving earth crushed some concrete forms and two negro laborers were caught in the falling timber, but were not seriously injured.

Mateo Rodriguez was 42 years of age and came to the Isthmus about eight months ago from Alberca, in the province of Salamanca, Spain. A wife, living in that village, survives him.

Band Concert.

The Isthmian Canal Commission Band will give a concert at Empire, C. Z., on Sunday, November 20, 1910, at 6 p. m. The program follows:

1 March—*Columbia Phonograph Co*	Burton
2 Selection—*Chocolate Soldier*	Straus
3 Intermezzo—*Bitter Sweets*	Engleman
4 Overture—*Raymond*	Thomas
5 Waltz—*Tres Jolie*	Waldteufel
6 Medley Selection—*The Cristobal Minstrels*	Jennings

Introducing "Prairie Song Bird," "How Do You Do, Miss Josephine?" "Won't You Change Your Name?" "I'm Awful Glad I Met You," "Could You Learn to Love Me?" "Can't You See?" "Pony Boy," "Strawberries," "Schoolmates," "Molly Lee," and "When We're Out On Dress Parade."

7 Duet for Cornet and Baritone—*Angels' Serenade*	Braga

Messrs. Smith and Sanmartin.

8 Humoresque—*What's the Matter With Father?*	Lampe
9 March—*Any Little Girl That's a Nice Little Girl*	Fischer

Chas. E. Jennings, *Musical Director*.

The next concert will be given at Corozal on November 27, at 7.30 p. m.

Rainfall from November 1 to 12, Inclusive.

MIDNIGHT TO MIDNIGHT.

Stations.	Maximum in one day.	Date.	Total for period.
Pacific Division—	*Ins.*		*Ins.*
Ancon	.67	4	1.26
Balboa	.54	4	.87
Miraflores	1.04	12	3.21
Pedro Miguel	1.94	11	4.33
Rio Grande	3.25	11	5.49
Central Section—			
Culebra	1.62	11	4.09
Camacho	1.96	12	4.44
Empire	1.44	11	2.95
Gamboa	3.02	11	6.70
Alhajuela	1.21	11	4.92
El Vigia	1.21	4	4.68
Gorgona	1.48	6	5.38
San Pablo	2.98	11	6.78
Tabernilla	2.79	11	6.99
Bohio	3.13	11	11.74
Monte Lirio	2.50	4	14.51
Atlantic Section—			
Gatun	3.69	7	12.90
Brazos Brook	4.02	1	13.93
Cristobal	2.85	11	13.71
Porto Bello	3.89	4	*12.97
Nombre de Dios	4.58	4	8.72

*To 5 p. m., November 11.

CONCRETE WORK IN GATUN LOCKS.

Concrete work in Gatun Locks is about 42 per cent completed, 879,297 cubic yards out of a total of 2,085,000 having been placed at the close of work on November 12. The record of concrete placed each day last week, and the total up to and including November 12, is shown in the statement below.

Date.	Construction Plant. 2-Cubic yard mixers.			Auxiliary Plant. 2-Cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
November 7	1,730	28:48	6	734	12:40	2	195¾	2,659¾
November 8	1,762	31:17	6	886	12:40	2	282¾	2,930¾
November 9	2,114	35:08	6	786	12:40	2	309¼	3,209¼
November 10	2,244	37:58	6	680	12:10	2	279¾	3,203¾
November 11	2,012	33:46	6	578	11:40	2	317½	2,907½
November 12	1,610	28:21	6	710	10:40	2	196¼	2,516¼
Portable ½-yard mixer				21				21
Total	11,472	195:18	6	4,395	72:30	2	1,581¼	17,448¼
Previously reported								861,849
Grand total								879,297¼

The operation of plant No. 2 was interfered with on the afternoon of November 9, by a slide at the south end of Gatun Locks.

RECORD OF CANAL WORK SINCE AMERICAN OCCUPATION.

MONTHLY TOTALS BY CUBIC YARDS OF EXCAVATION AND LOCK AND DAM CONSTRUCTION.

[*All figures are of work useful for the completed Canal.*]

DRY EXCAVATION.

CENTRAL DIVISION.

MONTHS.	CULEBRA SECTION.*							CHAGRES SECTION.**			
	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1907.	1908.	1909.	1910.
January	....	70,650	120,990	566,750	1,227,022	1,150,249	1,323,693	....	169,447	389,399	175,802
February	....	75,200	165,410	639,112	1,248,265	1,194,454	1,259,173	....	200,145	450,182	286,309
March	....	132,840	239,178	815,270	1,290,885	1,434,597	1,509,728	....	324,233	619,491	484,846
April	....	126,749	213,177	879,527	1,242,574	1,272,746	1,288,845	....	329,483	510,020	428,777
May	27,556	75,935	196,209	690,365	960,840	1,126,963	1,099,279	....	235,902	386,170	248,974
June	32,551	76,905	212,623	624,586	1,134,032	1,242,134	1,305,141	....	322,145	275,900	164,389
July	31,599	78,570	159,789	770,570	1,121,325	1,200,828	1,153,810	....	345,757	233,897	166,106
August	35,056	49,210	244,823	786,866	1,171,927	1,173,370	1,377,714	2,900	368,683	231,543	234,404
September	25,220	44,085	291,452	753,468	1,122,860	1,235,978	1,339,948	21,546	346,948	235,818	234,290
October	19,695	52,940	327,009	834,499	1,160,101	1,302,901	1,320,314	25,627	424,911	221,409	271,409
November	28,860	60,540	221,642	790,632	1,022,576	1,070,792	....	44,044	336,390	93,619	....
December	42,935	70,630	307,689	1,025,485	1,210,046	1,152,022	....	98,652	383,948	105,044	....
Totals	243,472	914,254	2,702,991	9,177,130	13,912,453	14,557,034	12,977,645	192,769	3,787,992	3,752,492	2,695,306

ATLANTIC DIVISION. / PACIFIC DIVISION.

MONTHS.	ATLANTIC DIVISION. COLON (MINDI)†		GATUN LOCKS, DAM AND SPILLWAY.††			PACIFIC DIVISION. PEDRO MIGUEL LOCKS.‡			MIRAFLORES LOCKS, DAMS AND SPILLWAY.‡‡		
	1909.	1910.	1908.	1909.	1910.	1908.	1909.	1910.	1908.	1909.	1910.
January	45,664	....	292,155	102,690	125,011	....	83,726	27,320	7,203	61,202	31,479
February	46,046	....	282,797	95,031	123,738	....	58,242	9,486	39,046	53,689	15,310
March	70,713	....	374,598	90,051	132,007	....	95,624	6,784	73,194	51,417	18,184
April	74,368	....	373,456	70,009	103,243	....	101,365	9,129	98,943	60,060	12,148
May	71,407	....	266,747	52,786	82,958	....	57,523	10,405	73,023	47,588	20,250
June	80,101	....	244,951	36,556	88,088	13,228	70,971	8,420	68,691	55,653	21,994
July	82,378	....	213,359	39,058	95,503	22,648	77,503	4,410	104,369	50,999	11,990
August	66,249	....	188,262	40,346	99,737	22,217	58,025	12,789	94,248	35,446	17,548
September	61,437	....	145,990	49,945	103,040	28,833	48,825	10,405	90,923	31,803	8,590
October	72,643	....	154,064	57,321	118,327	48,875	39,002	7,433	74,700	25,349	9,850
November	42,009	....	118,278	63,452	....	55,401	20,207	....	52,930	18,644	....
December	....	....	119,904	96,590	....	65,578	28,342	....	69,650	20,083	....
Totals	713,015	....	2,774,561	793,835	1,071,652	256,780	739,355	106,581	846,920	511,933	167,333

*Total to November 1, 1910, 54,484,979 cubic yards.

**Total to November 1, 1910, 10,428,559 cubic yards.

†Total to November 1, 1910, 1,476,821 cubic yards; in this total are included 172,851 cubic yards removed in 1907, and 590,955 cubic yards removed in 1908.

††Total to November 1, 1910, 6,006,855 cubic yards; in this total are included 26,628 cubic yards excavated October to December, 1906, and 1,340,179 cubic yards in 1907; there were also 38,425 cubic yards removed by dredges at Gatun Dam site in 1907.

‡Total to November 1, 1910, 1,102,716 cubic yards.

‡‡Total to November 1, 1910, 1,526,186 cubic yards; there were also 78,233 cubic yards excavated at Balboa locks and dams in 1907; and 239,891 cubic yards at different points in prism to November 1, 1910.

WET EXCAVATION.

MONTHS.	ATLANTIC DIVISION. ATLANTIC ENTRANCE.§				GATUN LOCKS		PACIFIC DIVISION. PACIFIC ENTRANCE.§§						Miraflores Locks.§§§
	1907.	1908.	1909.	1910.	1908.	1909.	1905.	1906.	1907.	1908.	1909.	1910.	1910.
January	111,100	490,701	521,050	510,055	....	97,043	....	95,940	94,710	460,250	469,529	518,936	....
February	110,002	427,722	444,910	493,448	....	132,291	....	95,940	93,480	663,519	671,477	285,791	....
March	84,145	546,886	461,208	412,325	....	141,838	....	116,820	92,319	783,281	865,696	462,588	....
April	69,889	496,366	470,635	190,574	....	17,938	....	110,700	104,855	676,539	731,767	534,322	....
May	133,847	564,386	315,370	447,578	....	52,011	....	112,340	122,157	530,466	720,753	484,509	....
June	124,118	572,749	182,575	458,021	....	38,829	50,676	62,697	133,575	656,621	844,685	475,486	....
July	109,922	625,497	348,451	423,022	....	....	41,533	98,400	108,338	696,170	733,181	515,782	....
August	194,297	638,217	422,846	508,829	....	....	54,530	111,930	168,284	737,774	623,263	506,969	....
September	403,842	624,776	410,574	451,873	....	....	114,308	105,780	153,975	750,080	662,976	473,585	....
October	415,120	505,260	314,778	549,788	....	....	81,836	97,170	357,122	762,276	720,920	467,873	40,000
November	422,797	570,832	457,889	....	....	....	71,176	92,988	365,423	609,089	627,791	....	....
December	442,835	679,604	489,121	....	8,583	....	71,094	90,528	349,551	729,960	727,460	....	....
Totals	2,621,914	6,742,996	4,839,407	4,445,533	8,583	479,950	485,153	1,191,233	2,143,789	8,056,025	8,399,498	4,725,841	40,000

§Total to November 1, 1910, 20,077,365 cubic yards; in this total are included 399,820 cubic yards excavated in 1905, and 1,027,645 cubic yards in 1906.

§§Total to November 1, 1910, 25,001,539 cubic yards; there were also 172 cubic yards removed by steam shovels during October, 1908.

§§§Total to November 1, 1910, 319,647 cubic yards.

CONCRETE IN LOCKS AND DAMS.

MONTHS.	GATUN LOCKS.			PEDRO MIGUEL LOCKS.			MIRAFLORES LOCKS.	
	1909.	1910.	1911.	1909.	1910.	1911.	1909.	1910.
January	....	54,136	....	....	16,273	....	....	....
February	....	55,696	....	....	13,218	....	....	146
March	....	60,998	....	....	18,793	....	....	314
April	....	63,227	....	....	24,522	....	....	13
May	....	74,273	....	....	29,576	....	....	27
June	....	89,391	....	....	30,631	....	....	1,603
July	....	84,001	....	....	41,464	....	28	3,672
August	1,298	85,[illegible]96	....	....	51,264	....	74	6,030
Sept	12,294	76,721	....	2,370	50,702	....	....	18,133
October	29,378	86,949	....	8,310	61,422	....	....	22,159
Nov'mber	30,270	....	....	10,169	....	....	....	....
December	42,832	....	....	13,007	....	....	....	....
Total	116,072	731,088	....	33,856	337,865	....	102	52,097

From March 17, 1909, to November 1, 1910, there were placed in the Spillway of Gatun Dam 102,621 cubic yards of concrete, including 7,415 cubic yards placed in October, 1910; in Miraflores Dam there were placed 321 cubic yards up to November 1, 1910.

FILL PLACED IN DAMS.

MONTHS.	GATUN.*		PEDRO MIGUEL.†	MIRAFLORES.‡	
	1910.		1910.	1910.	
	Wet.	Dry.	Dry.	Wet.	Dry.
January	178,254	236,994	....	....	28,151
February	292,215	271,788	11,510	....	1,438
March	210,387	332,661	22,860	....	5,385
April	242,440	263,437	31,394	....	....
May	249,283	204,275	23,572	....	6,480
June	384,166	271,283	1,350	....	7,356
July	462,092	187,713	....	....	4,290
August	406,606	2[illegible]5,010	....	....	10,898
September	457,637	228,638	....	....	11,220
October	480,732	259,619	....	40,000	14,370
November	....	....	....	....	....
December	....	....	....	....	....
Total	3,363,812	2,491,418	90,686	40,000	89,588

*Dry fill begun in January, 1907, and 2,096,477 cubic yards of wet, and 3,241,418 cubic yards of dry fill were placed in 1907, 1908 and 1909.

†170,166 cubic yards placed in dams up to December, 1909, inclusive.

‡138,587 cubic yards of wet fill and 472,091 cubic yards of dry fill were placed in dams up to December, 1909.

CANAL EXCAVATION TO DATE.

By French Companies		78,146,960
French excavation useful to present Canal		29,908,000
By Americans—		
Dry excavation	75,344,412	
Dredges	45,955,509	
Total		121,299,921
May 4 to December 31, 1904	243,472	
January 1 to December 31, 1905	1,799,227	
January 1 to December 31, 1906	4,948,497	
January 1 to December 31, 1907	15,765,290	
January 1 to December 31, 1908	37,116,735	
January 1 to December 31, 1909	35,096,166	
January 1 to October 31, 1910	26,370,534	

TOTALS BY DIVISIONS AND AMOUNT TO BE EXCAVATED.

DIVISIONS.	Amount excavated		Remaining to be Excavated.	
Atlantic—				
Dry excavation	7,483,676	28,087,999	789,378	15,269,346
Dredges	20,604,3[illegible]3		14,479,968	
Central—				
Culebra Cut	54,484,979	64,913,538	29,701,745	32,211,480
All other points	10,428,559		2,509,735	
Pacific—				
Dry excavation	2,947,198	28,298,384	3,132,944	13,757,019
Dredges	25,351,186		10,324,075	
Grand totals		121,299,921		61,237,845

DRY EXCAVATION—PRISM.

Table No. 4.

Detailed cost per cubic yard for quarter ending September 30, 1910.

Items.	Atlantic Division.				Central Division.				Pacific Division.			
	July.	August.	Sept.	Total.	July.	August.	Sept.	Total.	July.	August.	Sept.	Total.
Quantities—cubic yards					1,310,620	1,607,582	1,574,238	4,492,440	890			890
Clearing site					$0.0001			$0.0000				
Drilling					.0629	.0484	.0460	.0518				
Blasting					.0751	.0500	.0485	.0568				
Loading by power					.0629	.0490	.0482	.0528	$1.0981			$1.0981
Tracks					.1152	.1139	.0994	.1092	.4908			.4908
Transportation					.1262	.0706	.0792	.0898	1.0133			1.0133
Dumps					.0625	.0599	.0582	.0600	*.6633			*.6630
Pumps					.0067	.0025	.0007	.0031	.0570			.0570
Maintenance of equipment					.0936	.0839	.0918	.0895	.0140			.0140
Plant					.1000	.1000	.1000	.1000	.1100			.1100
Division expense					.0165	.0128	.0136	.0142	.1923			.1923
Total division cost					$0.7217	$0.5910	$0.5856	$0.6272	$2.3122			$2.3125
Administrative and general expense					$0.0446	$0.0497	$0.0519	$0.0490	$0.4633			$0.4633
Total cost					$0.7663	$0.6407	$0.6375	$0.6762	$2.7755			$2.7758
Dry excavation—Prism, by contract— Quantities—cubic yards					9,296	4,636		13,832				
Contract cost					$0.3500	$0.3500		$0.3500				
Plant arbitrary					.1000	.1000		.1000				
Total cost					$0.4500	$0.4500		$0.4500				
Total dry excavation, quantities, cubic yards					1,319,916	1,612,118		4,506,272				
Unit cost					$0.7641	$0.6402		$0.6755				

*Credit.

DREDGING EXCAVATION—PRISM.

Table No. 5.

Detailed cost per cubic yard for quarter ending September 30, 1910.

Items.	Atlantic Division.								Pacific Division.							
	July.		August.		September.		Total.		July.		August.		September.		Total.	
	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.
Dikes	423,092	$0.0215	508,829	$0.0094	451,873	$0.0107	1,383,794	$0.0135								
Clearing	423,092	.0006	508,829	.0006	451,873	.0006	1,383,794	.0006	515,782	.0019	506,969	$0.0027	473,585	$0.0005	1,496,336	$0.0017
Op'n seagoing suction dredge	292,272	.0349	285,510	.0323	273,702	.0306	851,484	.0326	240,645	$0.0417	245,741	.0410	226,650	.0441	713,036	.0422
R'p'rs seagoing suction dredge	292,272	.0116	285,510	.0090	273,702	.0276	851,484	.0159	240,645	.0211	245,741	.0176	226,650	.0102	713,036	.0164
Operation ladder dredges	130,820	.0630	131,090	.0569	129,823	.0664	391,733	.0621	213,194	.0636	190,941	.0544	172,335	.0552	576,470	.0580
Repairs ladder dredges	130,820	.0259	131,090	.0992	129,823	.0641	391,733	.0632	213,194	.0095	190,941	.0446	172,335	.0673	576,470	.0384
Operation dipper dredges			80,598	.0618	48,348	.0744	128,946	.0665	61,943	.0853	70,287	.0602	74,600	.0547	206,830	.0657
Repairs dipper dredges			80,598	.0915	48,348	.0984	128,946	.0941	61,943	.0427	70,287	.0623	74,600	.0355	206,830	.0468
Operation pipe line dredges			11,631	.1761			11,631	.1761								
Repairs pipe line dredges			11,631	.2126			11,631	.2126								
*Op'n tugs, clapets and scows	130,820	.0845	211,688	.0530	178,171	.0739	520,679	.0681	275,137	.0577	261,228	.0595	246,935	.0642	783,300	.0604
*R'p's tugs, clapets and scows	130,820	.0607	211,688	.0505	178,171	.0525	520,679	.0538	275,137	.0471	261,228	.0429	246,935	.0496	783,300	.0465
Drilling	27,938	.1068	44,564	.0922	31,004	.1034	103,506	.0995	22,024	.2193	12,620	.4253	32,963	.1648	67,607	.2312
Blasting	27,938	.2694	44,564	.0812	31,004	.1685	103,506	.1582	22,024	.1580	12,620	.5742	32,963	.1363	67,607	.2251
Operation drill barges									22,024	.1117	12,620	.3134	32,963	.1129	67,607	.1500
Operation rock breakers									22,024	.0791	12,620	.1435	32,963	.0662	67,607	.0849
Small boats	423,092	.0017	508,829	.0019	451,873	.0024	1,383,794	.0020	515,782	.0028	506,969	.0037	473,585	.0033	1,496,336	.0033
Repairs misc. equipment	423,092	.0013	508,829	.0019	451,873	.0013	1,383,794	.0015	515,782	.0033	506,969	.0032	473,585	.0124	1,496,336	.0061
Plant arbitrary	423,092	.0580	508,829	.0580	451,873	.0580	1,383,794	.0580	515,782	.1100	506,969	.1100	473,585	.1100	1,496,336	.1100
Division expense	423,092	.0136	508,829	.0173	451,873	.0162	1,383,794	.0158	515,782	.0093	506,969	.0068	473,585	.0090	1,496,336	.0082
Total division cost	423,092	$0.2261	508,829	$0.2438	451,873	$0.2491	1,383,794	$0.2402	515,782	$0.2823	506,969	$0.2977	473,585	$0.3127	1,496,336	$0.2971
Admin. and general expense	423,092	$0.0177	508,829	$0.0278	451,873	$0.0300	1,383,794	$0.0254	515,782	$0.0422	506,969	$0.0225	473,585	$0.0262	1,496,336	$0.0305
Total cost	423,092	$0.2438	508,829	$0.2716	451,873	$0.2791	1,383,794	$0.2656	515,782	$0.3245	506,969	$0.3202	473,585	$0.3389	1,496,336	$0.3276
Earth excavation—per cent	395,154	93.40	464,265	91,24	420,869	93.14	1,280,288	92.52	493,758	95.73	494,349	97.51	440,622	93.04	1,428,729	95.48
Rock excavation—per cent	27,938	6.60	44,564	8.76	31,004	6.86	103,506	7.48	22,024	4.27	12,620	2.49	32,963	6.96	67,607	4.52

*Based on yardage handled.

STONE PRODUCTION.

Table No. 6.

Detailed cost per cubic yard for quarter ending September 30, 1910.

	Porto Bello Quarry.				Ancon Quarry.			
	July.	August.	September.	Total.	July.	August.	September.	Total.
Quarrying—Quantities—cubic yards	62,996	74,925	69,733	207,654	43,230	61,092	58,244	162,566
Stripping	$0.0317	$0.0355	$0.0264	$0.0313	$0.0517	$0.0130	$0.0105	$0.0224
Drilling	.0714	.0568	.0554	.0608	.0904	.0550	.0464	.0613
Blasting	.3652	.2915	.2262	.2919	.0837	.0425	.0288	.0486
Loading	.1344	.1221	.1218	.1257	.0542	.0416	.0476	.0471
Transportation	.1031	.0875	.0886	.0926	.1026	.0573	.0601	.0704
Tracks	.0562	.0423	.0811	.0596	.0310	.0204	.0277	.0259
Power	.0386	.0382	.0393	.0387				
Maintenance of equipment	.1258	.1399	.1088	.1251	*.0307	.0248	.0377	.0146
Plant arbitrary	.3401	.3401	.3401	.3401	.2500	.2500	.2500	.2500
Total	$1.2665	$1.1539	$1.0877	$1.1658	$0.6329	$0.5046	$0.5088	$0.5403

Table 6—(*Continued.*)

	Porto Bello Quarry.				Ancon Quarry.			
	July.	August.	September.	Total.	July.	August.	September.	Total.
Crushing—Quantities—cubic yards	62,996	74,925	69,733	207,654	43,230	61,092	58,244	162,566
Operation, crushers	$0.0490	.$0.0469	$0.0462	$0.0473	$0.0225	$0.0184	$0.0174	$0.0192
Stone bins and conveyors	.0375	.0308	.0423	.0367	.0077	.0059	.0056	.0063
Power	.0361	.0404	.0416	.0395	.0382	.0359	.0173	.0298
Maintenance of equipment	.0918	.1010	.1253	.1064	.0027	.0053	.0011	.0031
Plant arbitrary	.1751	.1751	.1751	.1751	.0797	.0795	.0787	.0792
Total	$0.3895	$0.3942	$0.4305	$0.4050	$0.1508	$0.1450	$0.1201	$0.1376
Total cost production	$1.6560	$1.5481	$1.5182	$1.5708	$0.7837	$0.6496	$0.6289	$0.6779
Towing—Quantities—cubic yards	62,996	74,925	69,733	207,654	....	....	....	....
Operation tugs and barges	$0.1437	$0.1276	$0.1214	$0.1304	....	....	....	....
Maintenance of equipment	.0358	.0476	.0455	.0433	....	....	....	....
Plant arbitrary	.2240	.2240	.2239	.2240	....	....	....	....
Total	$0.4035	$0.3992	$0.3908	$0.3977	....	....	....	....
Unloading—Quantities—cubic yards	62,996	74,925	69,733	207,654	....	....	....	....
Operation, cableways a[illegible]	$0.1347	$0.0973	$0.1138	$0.1142	....	....	....	....
Power	.0218	.0185	.0206	.0202	....	....	....	....
Track repairs	.0002	....	....	....	....	....	....	....
Dumping	.0668	....	....	....	....	....	....	....
Maintenance of equipment	.0960	.1162	.0145	.0759	....	....	....	....
Plant arbitrary	.2030	.2030	.2029	.2030	....	....	....	....
Total	$0.5225	$0.4350	$0.3518	$0.4133	....	....	....	....
Rail Transportation to Storage—Quantities—cubic yards	....	31,268	27,191	58,459	43,230	61,092	58,244	162,566
Operation of trains	....	$0.0669	$0.0995	$0.0821	$0.0550	$0.0502	$0.0528	$0.0524
Repairs to tracks	....	....	.0050	.0025	.0184	.0120	.0119	.0137
Dumping in storage	....	.0004	.0005	.0724	.0090	.0095	.0119	.0102
Maintenance of equipment	....	.0248	.0652	.0436	.0179	.0134	.0136	.0147
Plant arbitrary	....	....	....	....	.0500	.0500	.0500	.0500
Total	....	$0.0921	$0.1702	$0.2006	$0.1503	$0.1351	$0.1402	$0.1410
Division expense	$0.1134	$0.1145	$0.0993	$0.1090	$0.0364	$0.0201	$0.0209	$0.0247
Total cost in storage	$2.6954	$2.5352	$2.4265	$2.5473	$0.9704	$0.8048	$0.7900	$0.8436

*Credit.

SAND PRODUCTION.

Table No. 7.

Detailed cost per cubic yard for quarter ending September 30, 1910.

Items.	Nombre de Dios.				Chame.			
	July.	August.	September.	Total.	July.	August.	September.	Total.
Excavation—Quantities—cubic yards	10,818	12,955	5,730	29,503	....	....	....	....
Blasting	$0.0513	$0.0015	....	$0.0195	....	....	....	....
Loading by cranes	.1790	.1998	$0.2290	.1978	....	....	....	....
Tracks	.1445	.1279	.0466	.1182	....	....	....	....
Transportation	.1110	.0805	.0825	.0921	....	....	....	....
Trestles	.0178	.0021	.0128	.0100	....	....	....	....
Dumps	.0114	.0130	....	.0099	....	....	....	....
Pumps	.0288	.0148	.0779	.0322	....	....	....	....
Maintenance of equipment	.1393	.2070	.1286	.1669	....	....	....	....
Total	$0.6831	$0.6466	$0.5774	$0.6466	....	....	....	....
Dredging—Quantities—cubic yards	14,208	16,067	27,652	57,927	36,299	40,277	42,500	119,076
Operation, dredges	$0.3327	$0.4713	$0.3277	$0.3688	$0.0981	$0.0862	$0.0776	$0.0868
Maintenance of equipment	.2776	.4744	.2597	.3236	.0185	.0446	.0495	.0384
Total	$0.6103	$0.9457	$0.5874	$0.6924	$0.1166	$0.1308	$0.1271	$0,1252
Plant arbitrary	$0.4670	$0.4680	$0.4680	$0.4677	$0.0300	$0.0300	$0.0300	$0.0300
Quantity produced—cubic yards	25,026	29,022	33,382	87,430	36,299	40,277	42,500	119.076
Total cost of production	$1.1088	$1.2802	$1.0537	$1.1446	$0.1466	$0.1608	$0.1571	$0.1552
Towing—Quantities—cubic yards	25,026	29,022	33,382	87,430	36,299	40,277	42,500	119,076
Operation, tugs and barges	$0.2673	$0.2481	$0.1817	$0.2282	$0.0960	.1012	.1183	.1057
Maintenance of equipment	.0802	.0849	.0867	.0843	.0302	0232	.0107	.0209
Plant arbitrary	.2310	.2309	.2310	.2310	.0600	.0600	.0600	.0600
Total	$0.5785	$0.5639	$0.4994	$0.5435	$0.1862	$0.1844	$0.1890	$0.1866
Unloading—Quantities—cubic yards	25,026	29,022	33,382	87,430	36,299	40,277	42,500	119,076
Operation, cableways and cranes	$0.1350	$0.1009	$0.1186	$0.1174	$0.0437	$0.0549	$0.0412	$0.0466
Power	.0358	.0195	.0185	.0238	.0392	.0427	.0017	.0270
Maintenance of equipment	.0854	.0667	.0220	.0550	.0581	.0536	.0898	.0679
Plant arbitrary	.1370	.1370	.1370	.1370	.1100	.1113	.1089	.1100
Total	$0.3932	$0.3241	$0.2961	$0.3332	$0.2510	$0.2625	$0.2416	$0.2515
Rail Transportation to Storage—Quantities—cubic yards	....	11,819	13,040	24,859	21,316	37,524	41,647	100,487
Operation of trains	....	$0.1906	$0.1022	$0.1442	$0.0473	$0.0478	$0.0520	$0.0494
Repairs to tracks	....	....	.0051	.0027	.0132	.0114	.0112	.0117
Dumping in storage	....	.0006	.0005	.0006	.0130	.0203	.0158	.0169
Maintenance of equipment	....	.0708	.0669	.0688	.0154	.0129	.0144	.0141
Plant arbitrary	....	....	....	....	.0900	.0900	.0900	.0900
Total	....	$0.2620	$0.1747	$0.2163	$0.1789	$0.1824	$0.1834	$0.1821
Division expense	$0.0846	$0.1232	$0.0670	$0.0907	$0.0214	$0.0306	$0.0237	$0.0253
Total cost in storage	$2.1651	$2.3981	$1.9844	$2.1735	$0.7841	$0.8207	$0.7948	**$0.8007**

OFFICIAL CIRCULARS.

Accumulative Leave.

CULEBRA, C. Z., November 8, 1910.

CIRCULAR No. 132-H:

The following extract from the minutes of the one hundred and fifty-eighth meeting of the Commission is published for the information of all concerned:

To facilitate the reduction of force that will be necessary as the construction of the Canal nears completion, and for the benefit of those employes who are unable to meet the expense of an annual vacation in the United States without encroaching on the savings which they may require to tide them over a period of enforced idleness when their employment on the Isthmus is finally terminated, it is

Resolved, That any employe whose forty-two days' leave of absence with pay shall become due on or after January 1, 1911, may defer such leave until his service is terminated, and if an employe serves twenty-two months continuously he may be granted not to exceed eighty-four days' leave with pay, provided that his resignation is accepted to take effect at the expiration of such leave, or that he be discharged on account of reduction of force.

Resolved further, That an employe who has deferred his leave and who is discharged on account of reduction of force may be granted, in addition to forty-two days' leave of absence with pay, three and one-half days' cumulative leave for each month's actual service in excess of twelve months to a total of not more than eighty-four days.

An employe who has accumulated eighty-four days' leave, but does not propose to leave the service, may be allowed forty-two days' leave of absence with pay and may be credited with the forty-two days still due him, and may again accumulate an additional forty-two days, not to exceed a total of eighty-four days, as provided above.

This resolution amends the clause in the resolution of June 11, 1907, reading: "* * * * leave is not to be cumulative, unless an employe is prevented by the Government from taking such leave when due."

GEO. W. GOETHALS,
Chairman and Chief Engineer.

CULEBRA, C. Z., November 8, 1910.

HEADS OF DEPARTMENTS AND DIVISIONS:

Referring to circular No. 132-H being issued this date relative to granting employes cumulative leave:

It appears probable that the privilege granted in this resolution of the Commission will be taken advantage of very largely, and that during the calendar year 1911 divisions which have heretofore been carrying extra men, especially during the summer months to fill vacancies on account of employes absent on leave, can probably reduce their extra force on that account, thereby resulting in a saving to the Commission.

It is hereby directed that the head of each department and division ascertain to what extent employes will accumulate the leaves which will fall due in 1911, making a report of the number of men in each class of employment who will probably take advantage of this provision. Employes should be given to understand that this request is for the purpose of securing preliminary information regarding the approximate number of men who will defer their leaves, and that they are not thereby bound to defer their leaves if they should change their minds later. As soon as this information is compiled, steps should be taken to meet the situation which will arise, by reducing the number of extra men and by not filling vacancies which occur, and which can be taken care of without taking on additional force.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Transfer of Engineers and Conductors.

CULEBRA, C. Z., November 9, 1910.

CIRCULAR No. 348-A:

When engineers and conductors are transferred from one division to another on account of reduction of force, men so transferred shall retain all privileges to which they are entitled by seniority the same as though they were originally employed in the division to which they are transferred.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Repair of Typewriters.

CULEBRA, C. Z., November 11, 1910.

CIRCULAR No. 359:

When a typewriting machine is in need of repairs for the making of which the services of a typewriter repair man are required, the district quartermaster will be informed of the fact, together with the name of the maker and serial number of the machine, of the building and office in which the machine is located, and with the date by which the repairs should be completed.

The district quartermaster will telephone the above information to the superintendent of the Mechanical Division, Gorgona shops, and the latter will send the repair man to make the repairs.

Before leaving the district the repair man will ascertain whether or not any additional machines requiring repairs have been reported to the district quartermaster.

All departments and divisions should cooperate with the district quartermaster in the endeavor to reduce the number of trips to each district to a minimum.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Construction and Repair of Sidewalks.

CULEBRA, C. Z., November 14, 1910.

CIRCULAR No. 183-P:

Effective December 1, 1910, the construction and repair of sidewalks, including wood, gravel and cinders, will be performed by the Quartermaster's Department, except in such cases as the sidewalks are constructed simultaneously with roads which they parallel, when the work will be performed by the same force which builds the roads; and also except in such cases as a different method of construction may be ordered by me.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Colored Cotton Waste.

CULEBRA, C. Z., November 14, 1910.

CIRCULAR No. 314-C:

Until further notice colored cotton waste will be used as standard for all general purposes on the Isthmus, and the use of white waste will be confined to such special purposes as motor cars, in filters, etc., for which the colored waste is not suitable. All storehouse requisitions for white waste will state the purpose for which required.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Reduction in Force of Artisans.

CULEBRA, C. Z., November 14, 1910.

CIRCULAR No. 262-C:

Whenever a reduction in the force of artisans employed in any shop can be made, a list of the employes whose services can be dispensed with will be forwarded to the inspector of shops, and the latter will either indicate the place and position to which they will be transferred or the action to be taken in their cases.

No artisan will hereafter be given five days' notice or discharged on account of reduction in force, except by the direction of the inspector of shops.

GEO. W. GOETHALS, *Chairman.*

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal and Colon, during the weeks ending October 29, November 5 and November 12:

Sibiria, October 24, from New York, with 240 barrels sulphate alumina, 184 cases fuses, 200 barrels carbolic acid, 19 cases paper for stock.

Advance, October 25, from New York, with 18 pieces gear segments, 30 pinions, 6 cases hoisting machinery, 15 pieces hoisting machinery, 11 cable chains, 13 cases dredge sleeves, 16 packages dredge machinery for Atlantic Division; 5 cases electrical material, 3 crates concrete mixing machinery for Pacific Division; 45 kegs nuts, 25 cases iron forgings, 37 bundles castings, 572 pieces castings for Mechanical Division; 370 cases bandages for Sanitary Department; 165 drums paint, 58 cases school desks, 100 kegs spikes, 250 kegs bolts, 500 galvanized ash cans, 40 cases picks, 75 bundles claw bars, 69 cases water meters, 175 bundles manila paper, 88 cases caustic soda, 582 pieces white pine lumber for stock; and a miscellaneous cargo, the whole consisting of 3,844 packages, weighing 518 tons.

Turrialba, October 27, from New Orleans, with 6 reels wire rope for Mechanical Division; 66 tons dump car parts for Cristobal shops (for erection); 141 cases fire brick, 26,400 feet white oak lumber, 20 cases rail benders and wrenches, 8 pieces spuds for masts, 2,029 pieces yellow pine car stakes for stock.

Almirante, October 28, from New York, with 3,513 sacks oats, 46 barrels drift bolts, 21 bundles steel bars, 20 pieces steel bars, 14 cases fuses for stock.

Gretavale, October 28, from Brunswick, with 45,000 cypress cross-ties for stock.

Panama, October 28, from New York, with 9 bales hose for Atlantic Division; 39 steel castings for Central Division; 437 pieces car couplers, 750 pieces castings for Mechanical Division; 30 cases drugs and sundries for Sanitary Department; 188 cases caustic soda, 18 cases brass rods, 10 cases drills, 32 cases wrenches, 10 crates grindstones, 200 cases Sapolio, 24 cases rubber hose, 425 kegs bolts and rivets, 84 cases lanterns, 40 kegs wire nails, 250 bundles plain wire for stock; and a miscellaneous cargo, the whole consisting of 3,133 packages, weighing 290 tons.

Glenwood, October 30, from Baltimore, with 162 tons lock construction material, and 12,046 feet spruce lumber for Atlantic Division; 915 bundles corrugated steel bars, 2,063 pieces corrugated steel bars for Pacific Division; 450 pieces black wrought steel pipe for Mechanical Division; 12,500 cases dynamite, 906 drums lubricating oil, 1,250 cases fire brick, 500 kegs white zinc, 754 tons coke, 1,196 pieces steel pipe, and 2,500 kegs railroad spikes for stock.

Nordpol, November 1, from New York, with 15,300 barrels cement for Atlantic Division; 61,200 bags cement for Pacific Division.

Prinz August Wilhelm, November 1, from New York, with 10 cases enamel, 114 barrels lump alum for stock.

Cristobal, November 2, from New York, with 25,500 barrels cement for Atlantic Division; 102,000 bags cement for Pacific Division.

Abangarez, November 3, from New Orleans, with 160,283 feet yellow pine lumber for Atlantic Division; 419 pieces cypress piling for Pacific Division; 276 cases fire brick, 3,192 pieces yellow pine car stakes, and 208 bales cotton waste for stock.

Allianca, November 4, from New York, with 1 relay pump unit, complete, 28 packages machinery, 10 cases dredge sleeves, for Atlantic Division; 12 crates furniture, 44 barrels alcohol for Sanitary Department; 1,163 pieces castings, 1,209 pieces knuckles, for Mechanical Division; 48 cases picks, [illegible] cases graphite, 447 kegs rivets, 115 kegs bolts, [illegible] bolts, 67 crates pails, 8 cases bronze rods for [illegible] and a miscellaneous cargo, the whole consisting of 3,797 packages, weighing 352 tons.

Santa Marta, November 4, from New York, with 60 pieces steel angles, 119 tons lock construction material for Atlantic Division; 8 crates steel castings for Mechanical Division; 23 cases steel shafting, 50 pieces switches, 35 reels steel rope, 100 packages brooms for stock.

Sarnia, November 6, from New York, with 200 barrels crude carbolic acid, 40 cases lamp black, 8 cases paper for stock.

Galveston, November 7, from Philadelphia, with 2,652 bundles corrugated steel bars, 83 tons lock construction material, 105 pieces steel rail for Atlantic Division; 35 crates machinery, 339 tons lock construction material for Pacific Division; 198 pieces steel bars for Mechanical Division; 334 tons steel plates, angles etc.; 331 tons steel pipe, 350 cases gasoline, 650 cans gasoline, 774 bars iron for stock.

Atenas, November 10, from New Orleans, with 114,963 feet yellow pine lumber for Atlantic Division; 39,660 feet white oak lumber, 1,592 pieces yellow pine car stakes, 138 bales straw, 25 barrels tallow for stock.

Metapan, November 10, from New York, with 17 cases shafting, 32 reels steel cable, 31 bundles insulated copper wire, 274 drums car oil, 102 cases gas engine oil for stock.

Colon, November 11, from New York, with 14 cases electrical machinery for Atlantic Division; 259 pieces castings, 24 barrels locks for Mechanical Division; 23 cases bandages, 34 cases drugs and sundries for Sanitary Department; 200 pieces switches, 20 cases wrenches, 13 cases machetes, 60 cases water coolers, 700 kegs white lead, 115 kegs mule shoes, 25 kegs broncho shoes, 150 cases sal soda, 20 cases lubricating oil, 42 bundles shovels, 13 cases oil cans for stock; and a miscellaneous cargo, the whole consisting of 1,912 packages, weighing 205 tons.

Aldershot, November 11, from Gulfport and Mobile, with 1,061,708 feet yellow pine lumber, 211 pieces piling for Atlantic Division; 6,375 feet white oak lumber for Mechanical Division; 288,923 feet yellow pine lumber, 116 pieces piling for stock.

Stages of the Chagres.

Maximum heights of the Chagres river for the weeks ending midnight, Saturday, November 5 and 12, 1910. All heights are in feet above mean sea level:

DAY AND DATE	STATION.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sunday, Oct. 30	129.2	96.6	50.6	19.4	18.4
Mon. Oct. 31...	130.2	96.0	49.7	19.7	18.9
Tues. Nov. 1....	129.8	95.7	50.2	20.2	19.4
Wed. Nov. 2...	127.9	94.4	48.2	19.7	19.4
Thurs. Nov. 3..	140.2	101.4	50.3	19.7	18.8
Friday, Nov. 4.	140.2	102.2	57.9	23.7	20.6
Sat. Nov. 5	129.0	95.3	49.7	21.9	20.6
Height of low water.......	125.0	92.0	46.0		
Sun. Nov. 6....	128.6	94.8	49.2	20.7	20.2
Mon. Nov. 7...	132.0	97.0	50.3	20.5	20.0
Tues. Nov. 8...	130.6	96.2	50.2	21.0	20.4
Wed. Nov. 9...	130.7	96.2	49.7	20.8	20.4
Thurs. Nov. 10.	129.5	95.6	49.4	20.1	19.6
Fri. Nov. 11...	135.4	99.4	55.4	21.4	19.3
Sat. Nov. 12...	132.7	99.2	56.6	23.8	20.6
Height of low water.......	125.0	92.0	46.0		

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

The chess tournament closed last week with the following scores:

	Won.	Lost.		Won.	Lost.
Dubois	10	2	Goodenow	5	7
Warner	9	3	Putnam	4	8
Stiles	7	5	Mengel	2	10
Bartlett	5	7			

The men that bowled over 200 during the week are: Dougherty, 217; Fox, 203, 204; Cornthwaite, 201; Cohen, 204; Huttlemeier, 204.

The men that rolled over 100 in duckpins are: Hurst, 105; McIlvaine, 104; Fox, 105; Fleischman, 100.

The bowling match between Gorgona's second team and Culebra's second team at Culebra resulted in Gorgona winning. Scores: Culebra, 719, 773, 740; Gorgona, 723, 728, 819.

The standing in the handicap billiard tournament is as follows:

Name.	Handicap.	Won.	Lost.
Conlan	100	6	0
Case	60	3	1
French	60	6	2
Dubois	100	4	2
Silver	80	4	4
McCann	70	3	4
Thomson	90	3	5
Kaufmann	60	2	5
Koperski	60	0	8

The discussion club met on Thursday night under the leadership of the Rev. A. A. Nellis; subject, "Thrift." The club will meet again on Thursday under the leadership of Mr. Kramer; subject, "Diet on the Canal Zone."

EMPIRE.

The following high scores were bowled during the week: Bardelson, 204; Gorham, 209; Goolsby, 200, 211, 201; Huson, 203; Anderson, 206; Drake, 203.

The Gorgona ladies' bowling team defeated the Empire ladies' team two out of three games on November 10. Following are the scores: Gorgona, 503, 500, 611; Empire, 506,499, 542.

At the meeting of the discussion club held on November 9, led by F. G. Smith, the subject discussed was "Fellowship."

The following program was given by the literary society on November 11: Paper on socialism, H. W. Sawtelle; article on eating, J. H. Cash; parliamentary quiz, J. H. McNeil; "How to improve the society," Perry Brown.

At the meeting of the committee on Christmas celebration, held on November 10, the following officers were elected: Chairman, W. W. Warwick; chairman, finance committee, T. L. Clear; treasurer, E. P. Beck; secretary, A. B. Dickson.

A big smoker will be held on November 18 to which every man in Empire is invited. In addition to sketches by Young and Evans, and King and Cullen, there will be numbers of shorter duration.

At a meeting of the Empire Dramatic and Musical Society held on November 12, A. B. Dickson was elected president, and Miss Lucy Clark, secretary and treasurer. The society plans to give an oratorio in December; a minstrel show and play in January, and a light opera in February.

GORGONA.

The pool committee has arranged a handicap pool tournament for November, the winner to receive an ivory-tipped jointed cue. The following men are entered: Emery, Ewing, Gowan, Goree, Montgomery, Lux, Clarke, Chambers, Pierson, Kaufmann, Kneeland, Ashman, Canfield, Sheridan, Burmeister and Robitoy. The tournament began on November 14.

The 200 or over bowling scores for the week were made as follows: Arnold, 200, 200; Witmer, 209; Roper, 205; Halderman, 202, 210; McConaughey, 223, 226; Hopkins, 203, 245.

The local team took three straight bowling games from Culebra's first team on Saturday, November 12. Scores: Gorgona, 781, 752, 832; Culebra, 702, 737, 694.

The Culebra-Gorgona basketball game on Saturday night was a victory for Gorgona by a score of 32 to 15.

GATUN.

Gatun defeated the Cristobal second bowling team two games out of three on Thursday evening, November 10. Scores: Gatun, 827, 784, 682; Cristobal, 763, 737, 876.

A meeting of the committee, which is to arrange for the Christmas celebration, was held on Tuesday evening, November 15, at the clubhouse. The celebration will be on a much larger scale than in any previous year.

On Wednesday evening the Spanish class will hold its first meeting. The Y. M. C. A. will try to organize a class in any study in which at least five men are interested and for which a teacher can be secured.

The executive council, consisting of Col. Sibert, Mr. Windes, Nat Johnson and Dr. Vaughn, met last Friday night. It was decided to adopt the committee idea in conducting the work of the association. Mr. Windes, Dr. Vaughn and the secretary will act as a special committee to select the following committees: Library and reading room, membership, visitation of sick, bowling, pool and billiards, social and entertainment, house, barber shop, gymnasium, and religious work. On Saturday evening of this week, a committee will meet to consider plans for increasing the membership of the association. A campaign will probably be launched.

Several new sets of chessmen have been ordered from the States and a chess and checker tournament will be started when the equipment arrives.

The committee on visitation of the sick would appreciate being notified of the illness of any of the men of Gatun. Such notices can be telephoned to the clubhouse.

CRISTOBAL.

The final bowling games of the preliminary series for the Isthmian championship were rolled at Cristobal on Saturday night between Gatun and Cristobal. Cristobal won by the following scores: Gatun, 776, 847, 818; Cristobal, 877,773, 842.

In the basketball game held at Cristobal on Saturday night between Gatun and Cristobal, the latter team won by the score of 11 to 8.

The standing in the interassociation basketball league is as follows:

	Won.	Lost.	Per cent.
Cristobal	4	0	1000
Gatun	2	1	666
Empire	1	2	333
Gorgona	1	2	333
Culebra	0	3	000

Misdirected Letters.

Ancon, C. Z., November 16, 1910.

The following insufficiently addressed letters originating in the United States and its possessions have been received in the office of the Director of Posts and may be secured upon request of the addressee:

LETTERS UNCALLED FOR OCTOBER 29:

Bartlett, Emer
Bartmess, Max
Baumgardner, John H.
Bowen, J. G.
Bowie, Wm. R.
Buell, H. H.
Daly, Hugh
Dauphin, E. C.
Denney, F. F.
Dixon, Raymond
Fielding, Edwin D.
Flowers, J. L.
Fogleman, Mrs. Edna
Fourcault, P. J.
Gordon, Samuel J.
Jarratt, Mrs. Nellie
Jefferson, Chas. F.
Kane, Jno.
Kaufman, R. H.
Kimberly, Mrs. William
Miller, Harry E.
Miller, Mrs. J.
Pierson, Mrs. Hattie
Polk, W. F.
Riedman, George E.
Roberts, Mrs. Richard
Schneider, Mr. and Mrs. H.
Schroeder, Chiesta
Scott, Mrs. E.
Scott, Miss Lizzie
Smith, Arthur
Stevenson, Donald
Stewart, Mrs. Arthur B.
Swain, Bernie E.
Swain, Mr. and Mrs. Lendon
Taylor, Samuel C.
White, C. D.
Woods, S. E.
Zimmerman, B. Frank

LETTERS UNCALLED FOR NOVEMBER 9.

Austen, Alfred L.
Benard, Peter
Blake, Allan
Cushman, C. F.
Donahoe, Tim J.
Doureski, John
Evans, Jos. A.
Faro, Mr.
Fryer, Mrs. Luther
Hayes, J. H.
Hornthal, Henry Ward
Job, David
Jonson, Miss Effie
McAdam, George Malcolm
Metcalf, B. F.
Murray, James E.
Myers, Forest, J.
Peay, Mrs. W. S.
Pelton, Henry J.
Pettits, William
Perry, Hobart E.
Rubier, H. C.
Sherry, Miss Laura E.
Silver, Jack
Smith, Thadeus
Walby, H.
White, John R.
Wilbur, J. C.

LETTERS UNCALLED FOR NOVEMBER 16.

Arbogast, Joe
Banet, Fred (2)
Boyd, Jr., W. M. (2d class)
Brown, J. M.
Carswell, L. C.
Cohen, Chas.
Ewing, J. C.
Fox, William
Gossman, L. R. (2)
Greene, J. W.
Grinder, J. D. (pkg.)
James, Miss Rachel
Janney, P. H.
Lamkin, L. D.
Lister I. E.
Luttrell, J. T.
Mayhew, F. O.
Myers, Herbert D. (2)
Thorpe, Thelma
Wright, Joe

Tide Table.

The following table shows the time of high and low tide at Panama for the week ending November 23, 1910. (75th meridian time):

DATE.	Low.	High.	Low.	High.	Low.
	A. M.	A. M.	A. M.	P. M.	P. M.
November 17	......	3.22	9.43	3.52	10.02
November 18	......	4.07	10.28	4 37	10.48
November 19	......	4.52	11.15	5.23	11.36
			P. M.		
November 20	......	5.38	12.02	6.10	......
November 21	12.25	6.27	12.51	7.00	......
November 22	1.18	7.18	1.45	7.55	......
November 23	2.16	8.16	2.43	8.57	......

LOST—A Greek letter fraternity pin set with pearls and garnets and engraved "F. C. Nichols" on the back. Finder will please return to F. C. Nichols, Balboa, C. Z., care Union Oil Company, and receive reward.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company, of the Royal Mail Steam Packet Company, of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Advance	P. R. R.	Thursday	Nov. 10
Ancon	P. R. R.	Saturday	Nov. 12
Panama	P. R. R.	Wednesday	Nov. 16
Allianca	P. R. R.	Tuesday	Nov. 22
Colon	P. R. R.	Monday	Nov. 28

CRISTOBAL TO NEW YORK.

Advance	P. R. R.	Tuesday	Nov. 22
Panama	P. R. R.	Monday	Nov. 28
Allianca	P. R. R.	Sunday	Dec. 4
Colon	P. R. R.	Saturday	Dec. 10

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 4th and 25th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Zacapa	U. F. C.	Thursday	Nov. 10
Magdalena	R.-M.	Saturday	Nov. 12
Almirante	U. F. C.	Thursday	Nov. 17
Prinz Aug. Wilhelm	H.-A.	Saturday	Nov. 19
Santa Marta	U. F. C.	Thursday	Nov. 24
Clyde	R.-M.	Saturday	Nov. 26
Metapan	U. F. C.	Thursday	Dec. 1
Zacapa	U. F. C.	Thursday	Dec. 8
Atrato	R.-M.	Saturday	Dec. 10
Almirante	U. F. C.	Thursday	Dec. 15
Santa Marta	U. F. C.	Thursday	Dec. 22
Tagus	R.-M.	Saturday	Dec. 24
Metapan	U. F. C.	Thursday	Dec. 29

COLON TO NEW YORK.

Metapan	U. F. C.	Thursday	Nov. 17
Prinz Joachim	H.-A.	Tuesday	Nov. 22
Zacapa	U. F. C.	Thursday	Nov. 24
Atrato	R.-M.	Monday	Nov. 28
Almirante	U. F. C.	Thursday	Dec. 1
Prinz Aug. Wilhelm	H.-A.	Tuesday	Dec. 6
Santa Marta	U. F. C.	Thursday	Dec. 8
Tagus	R.-M.	Monday	Dec. 12
Metapan	U. F. C.	Thursday	Dec. 15
Zacapa	U. F. C.	Thursday	Dec. 22
Oruba	R.-M.	Monday	Dec. 26
Almirante	U. F. C.	Saturday	Dec. 29

NEW ORLEANS TO COLON.

Turrialba	U. F. C.	Saturday	Nov. 12
Abangarez	U. F. C.	Saturday	Nov. 19
Atenas	U. F. C.	Saturday	Nov. 26
Turrialba	U. F. C	Saturday	Dec. 3
Abangarez	U. F. C.	Saturday	Dec. 10
Atenas	U. F. C.	Saturday	Dec. 17

COLON TO NEW ORLEANS.

Atenas	U. F. C.	Thursday	Nov. 17
Turrialba	U. F. C.	Thursday	Nov. 24
Abangarez	U. F. C.	Thursday	Dec. 1
Atenas	U. F. C.	Thursday	Dec. 8
Turrialba	U. F. C.	Thursday	Dec. 15
Abangarez	U. F. C.	Thursday	Dec. 22

COLON TO BARBADOS, CALLING AT TRINIDAD.

Magdalena	R.-M.	Tuesday	Nov. 22
Clyde	R.-M.	Tuesday	Dec. 6
Atrato	R.-M.	Tuesday	Dec. 20

The next sailing of the Leyland Line will be as follows: *William Cliff* on or about November 26, for New Orleans, via Kingston, Ja.

Hamburg-American steamers leave for New York at 10 a. m., and for Port Limon every Tuesday or Wednesday.

Royal Mail steamers leave for New York on alternate Mondays at 5 p. m., for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans leave on Thursday at 3 p. m., and for New York, beginning November 17, on Thursday at 11 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3rd and 20th of each month.

Proposals for Excavation in Canal Prism.

OFFICE OF CHIEF QUARTERMASTER,
CULEBRA, C. Z., November 2, 1910.

Sealed proposals for excavation of about 112,450 cubic yards of earth located at point 4-B, mile 29, on the Chagres River, will be received here until December 1, 1910, and then opened. Full information will be furnished by the division engineer, Empire, Canal Zone. Envelopes containing proposals must be endorsed "Proposals for excavation in Canal prism", and addressed

C. A. DEVOL,
Chief Quartermaster.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, NOVEMBER 23, 1910. No. 13.

The Canal Record

Published weekly under the outhority and supervision of the Isthmian Canal Commission.

The Canol Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name ond address of the writer.

NOTES OF PROGRESS.

Chairman's Monthly Report.

The report of the Chairman of the Isthmian Canal Commission for the month of October is published in full in other columns of this issue of THE CANAL RECORD. It gives a detailed account of the progress of Canal work in all departments and divisions.

Excavation in Chagres District.

On November 17, nine steam shovels of the 100-class, working in the Chagres district of the Central Division, excavated 12,654 cubic yards of material, or an average of 1,406 cubic yards per shovel for the 8-hour working day. The shovels were under steam 72 hours; were actually at work 54 hours and 25 minutes, and were delayed 10 hours and 35 minutes waiting for cars. Other delays were experienced on account of cleaning track, cleaning dipper, and repairing shovel.

Economy in Use of Dynamite.

The amount of dynamite in tons of 2,240 pounds, used in the Central Division for the months of August, September and October for the years 1908, 1909 and 1910, is as follows:

YEAR.	August.	September.	October.	Total.
	Tons.	*Tons.*	*Tons.*	*Tons.*
1908	322.21	324.65	327.75	974.61
1909	297.90	360.20	295.20	953.30
1910	191.30	199.05	153.23	543.58

The amount of rock excavated during the period in question was as follows:

YEAR.	August.	September.	October.	Total.
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*
1908	907,746	1,054,526	1,015,143	2,977,415
1909	1,043,355	1,107,649	1,196,297	3,347,301
1910	1,177,621	1,114,765	1,076,678	3,369,064

From this it will be seen that only 55.77 per cent as much dynamite was used during August, September and October of 1910 as was used for the same months in 1908, and 57.02 per cent as much as was used in the corresponding months in 1909.

The total saving for August, September and October, 1910, as compared with the corresponding months of 1908, is 431.03 tons (of 2,240 pounds), which at the present price of dynamite, amounts to $115,939. To this should be added the cost of handling, loading, shooting, etc., estimated at $30 per ton, or $12,930 additional saving. The total saving, therefore, exclusive of drilling and blasting or of exploders and connecting wire, which are assumed to have remained constant, is $128,869 for the period of three months, an average of $42,956 per month. This is the result of efforts made for some time past to reduce the consumption of dynamite, and the reduction has been especially marked since July 1, 1910.

Hydraulic Fill of Gatun Dam.

The hydraulic fill of the east section of Gatun Dam, which was suspended late in August will be resumed and two 20-inch suction dredges which have been pumping into the west section will be set at work on the east section. The filling of the east section was suspended, in order that the material already pumped in, which had reached an elevation of about 57½ feet above sea level, might consolidate and dry out, and that the filling of the west section on which little had been done might be advanced to a stage secure against the November floods of the Chagres. The fill of the west section has actually advanced more rapidly in proportion than the building of the toes, and the temporary suspension will, therefore, give an opportunity for increasing the proportion of dry fill. Little chance will be given during the months of November and December for the drying out of the east section, and the dredges will, therefore, continue to pump into that section until the beginning of the dry season, when they will again be transferred to the west section, and the eastern half will be allowed to consolidate and dry out during the whole of the dry season. The fill in the western section is now at 31.7 feet above sea level, and that in the east section at 56 feet above sea level, which is about 1½ feet lower than when the hydraulic work was suspended in August, the subsidence being due to consolidation and drying out of the material.

Concrete Wagon Bridge Over Mandingo River.

The Las Cascadas-Gorgona section of the Canal Zone highway is completed, with the exception of three-quarters of a mile of metaling, and a bridge over the Mandingo River between Bas Obispo and Gorgona. Plans for a bridge, which will span the stream at the site of the present ford, have been prepared in the office of the resident engineer at Empire. They provide for a reinforced concrete structure, with a floor supported by two 50-foot piers resting on concrete footings 5 feet 6 inches by 16 feet. Each pier will be 4 by 16 feet at the base and 3 by 12 feet at the top, and the distance between piers of 23 feet 6 inches from center to center. The length will be about 130 feet. The road surface at this point will be 93 feet 6 inches above sea level and about eight feet above the normal level of Gatun Lake. The present river level is at about elevation 60 feet.

It is estimated that the approaches to the bridge will require approximately 12,000 cubic yards of fill. The heaviest fill will be on the Gorgona side where the bank has a gradual slope, and there, an embankment 300 feet long must be made. Less than 100 feet of fill will be required on the Bas Obispo side where the bank descends more abruptly. There will be used in the construction of the bridge, according to the estimate, 409 cubic yards of concrete and 16½ tons of old French rail. About 200 cubic yards of excavation will be necessary in preparing for the pier foundations.

Gatun Dam Spillway.

The amount of concrete and large rock laid in the spillway of Gatun Dam during two weeks ending November 19, is shown in the following statement:

DATE.	Cubic Yards.		
	Concrete	Large rock.	Total.
November 7	202	4	206
November 8	246	12	258
November 9	242	6	248
November 10	204	10	214
November 11	192	11	203
November 12	282	10	292
Total	1,368	53	1,421
Previously reported			103,535
Grand total			104,956
November 14	180	8	188
November 15	202		202
November 16	540		540
November 17	240		240
November 18	218		218
November 19	184		184
Total	1,564	8	1,572
Previously reported			104,956
Grand total			106,528

Petition of Hourly Employes.

During the visit of President Taft, on November 16, he listened to petitions from the Americans on the Canal work, who are employed by the hour, in which an increase in pay and annual leave of six weeks, instead of two weeks, were requested. The employes were informed that an answer would be given them as soon as the President arrived in the States. That night a meeting of the boilermakers employed at Gorgona shops was held, and a notice of five days was given, at the end of which the resignations of the boilermakers would become effective, unless their demands were acceded to. On November 22, practically all of the first grade boilermakers at Gorgona had quit work. There are 122 in this grade, and up to quitting time on November 22, only two of them had expressed a desire to withdraw their resignations. About 75 of the men have applied for, and have been granted transportation to the States; others

NOTES OF PROGRESS.

(*Continued.*)

express an intention of leaving for New Orleans by the next ship, and still others say they will remain on the Isthmus at other work until the matter is settled.

The petition of the hourly men had been considered and refused by the Commission, prior to the arrival of the President. On Sunday, November 20, the machinists held a meeting in Colon, at which it was decided to take no further action until the decision of the President had been received.

Ancon Crusher.

A statement of the rock crushed at Ancon quarry during two weeks ending November 19, follows:

DATE.	Hours worked.	Cubic yards.
November 7	7:50	2,920
November 8	6:50	2,710
November 9	5:25	2,040
November 10	5:45	2,635
November 11	7:40	2,632
November 12	7:55	2,730
Total	41:25	15,667

DATE.	Hours worked.	Cubic Yards.
November 13 (Sunday)	8:00	3,087
November 14	4:50	1,700
November 15	7:20	2,555
November 16	7:20	2,811
November 17	8:00	2,516
November 18	8:10	2,976
November 19	7:30	3,249
Total	51:10	18,894

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for two weeks ending November 19. follows:

DATE.	Hours worked.	Cubic yards.
November 7	7:47	2,586
November 8	9:40	3,007
November 9	6:33	1,973
November 10	7:45	2,499
November 11	8:24	3,505
November 12	7:26	2,966
Total	47:35	16,536

DATE.	Hours worked.	Cubic Yards.
November 14	9:01	3,773
November 15	7:28	3,432
November 16	5:43	2,362
November 17	5:57	2,282
November 18	7:46	3,058
November 19	8:25	3,574
Total	44:20	18,481

Spanish War Veterans.

THE CANAL RECORD:

Sir: I am heartily in favor of the movement of organizing a camp of the United Spanish War Veterans Association on the Isthmus. Anything I can do to forward this movement I will be glad to do. Yours truly,

J. WARREN KEIFER, *M. C.*
Past Commander-in-Chief,
Spanish War Veterans Association.

All those eligible to membership in the United Spanish War Veterans Association please send their names to Mr. Charles Cameron, Culebra, C. Z. This applies to all eligibles, other than those living in Gatun or Cristobal.

CONCRETE WORK IN THE LOCKS.

The highest record to date of concrete laying in the locks was made by the Pacific Division on November 21, when a total of 5,564 cubic yards was placed in the locks at Pedro Miguel and Miraflores. This exceeds all previous records by 1,133¾ cubic yards. The next highest record was made at Gatun on November 16, when 4,443¼ cubic yards were placed in the locks.

On November 21, when 5,564 cubic yards of concrete were placed in the Pacific Division locks, the operated plant consisted of six 2-yard mixers at Pedro Miguel, and of two 2-yard, four ½-yard, and one ⅓-yard mixers at Miraflores, representing in all 9⅙ two-yard mixers. A total of 78.46 mixer hours was worked, an average of 8.55 hours per mixer, the output representing 70.92 cubic yards per hour per 2-yard mixer.

At Gatun, on November 16, the operated plant consisted of eight 2-yard mixers and they worked a total of 65 mixer hours, an average of 8.1 hours per mixer, and the output averaged 68.3 cubic yards per hour per 2-yard mixer.

GATUN LOCKS.

Concrete work in Gatun Locks is about 43 per cent completed, 898,196 cubic yards out of a total of 2,085,000 having been placed at the close of work on November 19. The output for the auxiliary plant has been reduced for several days past on account of the necessity of using the narrow gage equipment in taking out the slide, which occurred at the south end of the locks on November 9. It is hoped that the removal of this slide will be completed in a few days, when the output from the auxiliary plant will be restored to its normal figure.

A statement of the amount of concrete placed in the locks each 12-hour day for the week ending November 19, and of the total follows; and a similar statement for the work in the Spillway of Gatun Dam is published elsewhere in this issue:

DATE.	CONSTRUCTION PLANT. 2-Cubic yard mixers.			AUXILIARY PLANT. 2-Cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
November 14	2,084	36:30	6	576	8:40	2	291	2,975
November 15	2,118	35:08	6	712	11:40	2	231¼	3,061¼
November 16	2,642	43:08	6	1,552	22:00	2	236¼	4,443¼
November 17	1,811	29:18	6	538	10:10	2	201½	2,559½
November 18	1,931	32:20	6	584	10:40	2	202¼	2,717¼
November 19	2,198	35:37	6	622	10:40	2	299½	3,142½
Portable ⅓-yard mixer	......	......	......	69	......	......	......	......
Total	12,784	......	6	4,653	......	2	1,461¾	18,898¾
Previously reported	......	......	......	......	......	......	......	879,297¼
Grand total	......	......	......	......	......	......	......	898,196

The 69 cubic yards shown for the portable ⅓-yard mixer are included in the totals for each day and were placed as follows: November 14, 24; November 16, 13; November 17, 9; November 19, 23.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is nearly 50 per cent completed, 415,711 cubic yards out of a total of 837,400 having been laid at the close of work on November 19. The record of concrete placed during each of the 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-Cubic yard mixers.			AUXILIARY PLANT. 2-Cubic yard mixers.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds*
November 14	2,230	27:50	4	664	14:50	2	10	2,904
November 15	1,910	25:00	4	616	13:00	2	....	2,526
November 16	1,812	24:33	4	516	12:00	2	....	2,328
November 17	1,750	20:67	4	496	12:50	2	25	2,271
November 18	1,950	26:00	4	528	11:50	2	10	2,488
November 19	1,788	26:67	4	458	11:17	2	....	2,246
Total	11,440	150:17	4	3,278	74:67	2	45	14,763
Previously reported	....	.....	......	....	....	......	3,692	400,948
Grand total	....	....	......	....	....	......	3,737	415,711

MIRAFLORES LOCKS.

The record of concrete placed in the upper lock at Miraflores during the six 8-hour working days of the week ending November 19, follows:

DATE.	AUXILIARY PLANT.										Total.
	2-Cubic yard mixers.			½-Cubic yard mixers.			⅓-Cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
Nov. 14	486	8:67	2	258	14:25	2	92	8:00	1	12	848
Nov. 15	572	8:50	2	413	27:50	4	59	8:00	1	7	1,051
Nov. 16	488	8:50	2	516	31:50	4	99	9:00	1	7	1,110
Nov. 17	400	7:00	2	450	31:41	4	96	8:00	1	7	953
Nov. 18	484	8:33	2	470	31:75	4	84	7:58	1	43	1,081
Nov. 19	450	8:00	2	394	24:50	4	139	9:00	1	31	1,014
Total	2,880	50:00	2	2,501	160:91	3.67	569	49:58	1	107	6,057
Previously reported	....	....	......	....	....	......	....	....	......	1,515	60,706½
Grand total	....	....	......	....	....	......	....	....	......	1,622	66,763½

PRESIDENT TAFT'S VISIT.

His Speeches and Impressions While Here.

During his visit of four days on the Isthmus, November 14 to November 17, President Taft made two public addresses, the first at a meeting of the employes of the Commission at Paraiso on November 15, and the second at the banquet in his honor given by the President of the Republic of Panama in the city of Panama on November 16. On the eve of his departure on November 17, he handed to the representatives of the press who accompanied him a formal statement of his impressions. The authorized text of these deliverances is appended.

I.

HIS IMPRESSIONS.

This is the fifth time that I have visited the Isthmus and have gone over the whole line and looked into every part of the improvement. It is about 22 months since I was here the last time and the progress which has been made is most satisfactory; indeed, it is remarkable. The first thing that strikes one is the fact that work is being done apparently on every foot of the fifty miles of the Canal, and is being done under an organization of men, plants and materials that operates as economically and effectively as if it were a machine with Colonel Goethals in control of the lever, which sets and keeps the whole machine in operation. In my visits prior to and including 1907 the question of houses for employes; of commissary and conveniences of life; of the securing of adequate labor, presented serious obstacles to overcome. Now all those questions have largely disappeared and are mere matters of smoothly working routine.

When I was here 22 months ago, the main question was the confirmation of the judgment of Congress in having adopted the lock type of canal instead of the sea level type. As to the question of the lock type of the Canal, the construction of the Gatun Dam and the Locks to the extent to which they are completed has removed from every impartial observer the slightest doubt as to the wisdom of the decision made and the feasibility of the plan adopted, and this conclusion has been further confirmed and clinched by the difficulty of slides in the Culebra Cut, which, while for a canal of an 85-foot level, make only additional excavation that can be readily taken care of, show that an attempt to sink the Canal in the Culebra Cut of nine miles to a depth 80 feet below the present proposed level would lengthen the time of construction so as to weary the patience of the American people, would make the cost almost prohibitory, and would leave exceedingly doubtful the question whether, with the difficulty of the Chagres River, such a canal was possible at all.

The Gatun Dam and Locks, with the lake now 18 feet deep and slowly increasing to a depth of 85 feet, which constitute the key of the whole plan of the Canal, are so far advanced that taken with the Culebra Cut and the locks at Pedro Miguel on the Pacific side, they give a definite picture of what the Canal is to be and inspire one with an eagerness for completion that makes itself manifest throughout the entire human organization created and maintained under Colonel Goethals and his assistants.

The reports of slides and caving in of the banks in the Culebra Cut already referred to, that come from time to time through the press, grow out of a peculiar geological formation in which igneous rock and sedimentary rock lie in juxtaposition, and the sedimentary rock loses its supporting quality through its exposure to the air, or is of such weak structure as to collapse when the balanced support given in its natural position is withdrawn. Such slides, however, can be easily removed by further excavation and a widening of the slope where they occur, and they merely add something to the amount of excavation heretofore calculated to be necessary and to the cost, but the percentage thus added, both in time of excavation and cost, is very small, and not enough to increase the estimates made by Colonel Goethals as to either the time of completion or the total cost.

The work is so far advanced that the time has come for the discussion of plans for the management and maintenance of the Canal; for the tolls to be charged; for conveniences at terminals; for economical disposition of the vast plant; for arrangements of peculiar importance to the United States Navy, and the proper means of policing and defending this greatest constructive work of many centuries.

The *esprit* that one finds among the Canal employes and the enthusiastic, intelligent and patriotic leadership that Colonel Goethals and his assistants show at every turn and under every emergency, leave no doubt that the Canal will be fully completed within the time guaranteed, to wit, the first of January, 1915, and within the estimate made by Colonel Goethals in 1908 of $375,000,000.

During this wet season we have been favored with clear weather free from rain during our stay of four days.

The Government of Panama is peacefully pursuing its course and enjoying the prosperity that the investment of $28,000,000 or $30,000,000 a year upon the Isthmus necessarily involves for such close neighbors as the people of Panama, and there is a political calm in the Republic. The authorities in charge manifest every disposition to assist the United States in its construction of the Canal and to conform in every detail to the obligations of the Treaty between the United States and Panama, which makes such generous provision for the successful carrying through of the great enterprise so far as local conditions affect it.

II.

ADDRESS AT PARAISO.

Ladies and Gentlemen—I have come here tonight at the instance of Colonel Devol, who is at the head of the Zone branch of the Red Cross, to say a word in behalf of that institution; to encourage those who are its members to continue their support, and to urge others who are not members to become so, because of its usefulness, not only to this community itself, but also to your international neighbors.

I need hardly rehearse the history of the Red Cross. Those of you who are members have had occasion to read it in the *Red Cross Bulletin*, and know that it originated in the charitable inspiration of a Swiss gentleman named Dunant, who was present on the field of battle of Solferino in the French, Italian and Austrian War in 1859. Through his intercession the governments of Europe were induced to send delegates to a conference to see if societies devoted to the aid of the wounded and suffering from the violence of battle might be encouraged by the combatants and made immune from attack by either party. The efforts of this gentleman continued during the period of our Civil War, in which the United States Sanitary Commission was organized to assist the Medical Corps of the Army in the service to the dying and wounded. The United States Sanitary Commission expended $5,000,000 in this assistance and received the thanks and the lasting gratitude of all the men connected with the armies on both sides. Growing out of the efforts of Mr. Dunant, and the lesson of the United States Sanitary Commission, the Red Cross Association assumed a definite form, and in 1882 the United States became one of the national signatories to a treaty to recognize the Red Cross in war as entitled to immunity from attack, because of its use to all combatants. A branch of the Red Cross was incorporated in this country in 1893, but did not live to successful and prosperous growth. In 1903 it was reorganized on its present basis. Miss Mabel Boardman of Washington, procured the reincorporation by Congress and the dissolution of the old association, and under her inspiring leadership it has come to very world-wide usefulness. It does not compare in numbers or in endowment fund to similar associations in foreign countries, but it is growing. There is a plan now on foot to raise an endowment fund of $2,000,000, and portions of this fund have been assigned to various cities in the ratio of their population, and the interest of the leading citizens of the country has been enlisted to secure the proper amount. The amount assigned to New York, for instance, is half a million dollars. We have already raised $418,000, and the prospect of making the $500,000 is exceedingly promising. Similar steps have been taken with respect to all the large cities, and I think we may reasonably hope that in the course of a year or more we shall have a fund of $2,000,000, the income of which can be used to form an emergency fund from which, without inviting special aid, effective assistance can be offered by the association to every people in the world who may be suffering from any calamity.

Of course, the primary cause and origin of the Red Cross was the suffering in the time of war in battle, and the lack of suitable medical and nursing assistance, and that is its primary purpose now. But as the world grows older, as intercommunication between peoples becomes closer, as the destructive freaks of nature work hardship and suffering and death to a people, the fact is soon known the world over, and the closer brotherhood of man prompts the tendering of assistance across international lines.

You have organized on the Isthmus. You have a membership that comprises ten per cent of American adult whites on the Isthmus, which is a far higher percentage than is shown in any state in the union; and you have already contributed $1,500 to the assistance of your brethren in Costa Rica, who suffered from the late earthquake. I am not here, therefore, to teach you your duty in this regard. You know it, and, knowing it, have acted. I am here to congratulate you on what you have done, and to say to you only, "Do not weary of well doing." I observe that the members of the Red Cross are seated together, and then that there are others who are not members. I urge these others, if they would spend some of their hard earned money for the benefit of their fellowmen, that they cannot find an instrumentality more effective, more economical, and better adapted to the purpose than the Red Cross; and that every dollar that they subscribe to that institution will be expended for the aid of human kind, and will add to the sum of human happiness.

I have referred to the endowment fund. The only permanent fund that the association has comes from the membership dues; from what is left over from special donations, not all used for the particular purpose for which they were given, and the endowment fund. Of course, whenever there is a great disaster the association is in the habit of calling for special contributions, and at such a time it is easy to awaken the generosity of the American people, and in time to secure ample funds. But what the society needs is ability instantaneously to send pecuniary aid to relieve such suffering. The membership dues furnish some funds for this purpose, and therefore everybody who becomes a member and pays the yearly dues is a contributor to this particular phase of the cause. This is why it is important that the membership of the association should be increased in order that its usefulness should be increased. Hence, the appeal for new members.

And now may I digress from the chief purpose of this meeting and from that which was the occasion for calling it, for a few words concerning the great work of construction in which you are all engaged. This is the fifth visit which I have made to the Isthmus since the United States acquired title to the Canal from the French canal company. The first I made in April, or May, of 1904. Then, substantially no work had been done except a little experimental excavation in Culebra Cut under the shadow of Contractor's and Gold Hills. It was not then settled whether the Canal should be sea level or a lock canal. Gatun and Miraflores and Pedro Miguel were sleeping peacefully, with no knowledge of the world-wide reputation that they were subsequently to acquire. The hills that the relocated Panama railroad has cut through; the valleys that have been crossed by its immense fills were in the center of undisturbed forest and jungle. Colon was reeking with filth and disease. The city of Panama was picturesque, but its condition was unsanitary and its streets were so badly paved as to make a visit to the city most uncomfortable. There was a notch at Culebra between Gold Hill and Contractor's Hill, and there was a cut in the surface of the earth in that neighborhood to show where the French intended the Canal should be, but with that exception it was difficult from anything that appeared on the surface to stir one's imagination and create in his mind's eye a canal upon the bosom of which should float the commercial and military navies of the world.

Since that time there has been developed a wonderful organization by which this greatest modern work is being carried on to a successful completion. Homes have been made for 40,000 strangers. Food has been furnished; machinery has been set up; cars and locomotives have been bought and placed upon the railroad. The Zone, with the two cities at either end, has been subjected to regulation by sanitary scientists so that yellow fever and malignant malaria, and the other diseases that formed an insuperable obstacle in the French construction have been driven off the Isthmus. A plan for the Canal has been adopted, which, by closing with dam and locks the basin furnished by nature, proposes to turn the Chagres River into an immense lake for navigation and to rob the river of all its destructive capacity; and the great machine made up of human and mechanical parts has been set going in this strip of fifty miles by ten until now the work has reached a point where the mere inspection of it rouses the intensest interest, the greatest enthusiasm and the profoundest admiration for Colonel Goethals and his faithful staff of experts and all the men and women, who, by their work and their presence on the Isthmus, have made this result possible.

As the great creation takes form and the plan which was so clear to the professional men who designed it, opens itself in concrete mold to the observation of the layman, the eagerness with which we all look forward to the completion of the work grows apace, and we envy the record of the men to whose skill and courage and energy, persistence and foresight, the Canal will forever form an enduring monument.

It has been given me to visit it, as I have said, five times, and I cannot exaggerate the pleasure that these opportunities have made for measuring the extent of the work and its rapid progress. Americans are justified in an intense pride that so great a work is the creation of their own people. This Canal will radically change the world avenues of trade. It will double the naval strength of the United States. It will greatly cheapen transportation between the Atlantic and the Pacific seaboards of the United States. It will bring our country far closer to the western shore of South America, to Australia and the islands of the Pacific, and it will come to be regarded, I hope, as a permanent evidence to the world of the generous willingness of our country to expend from her great national wealth hundreds of millions for the general improvement of the world's trade.

I congratulate all who hear me and who are of the organization under the Canal Commission, whether you be officials in high authority, or only in the ranks of the army that is fighting this battle with nature, upon the high satisfaction that you must always feel after the work is done that you were among those who contributed to its success.

III.

SPEECH IN PANAMA.

President Arosemena and my friends of Panama—I am always glad to accept your hospitality. As once I have done in the case of Mexico, so now in the case of Panama, I have ventured to violate the customary limitation upon the movements of the President of the United States by leaving the soil where it exercises sovereignty to come beneath the flag and the protection of a friendly neighbor.

The birth of the Republic of Panama and the peculiar interest that the United States has had since that birth in Panama's welfare and prosperity found a common cause in the construction of the Panama Canal. The Treaty between the two countries makes the United States the guarantor of the integrity of the Panama Republic, and, therefore, in a sense the guardian of the liberties of her people secured by its constitution. Our responsibility, therefore, for your Government requires us closely to observe the course of conduct by those selected as the officials of your Government after they are selected, and to insist that they shall be selected according to law. All this, I say, makes us especially interested in what is done in your Government, but this relation neither calls for nor permits annexation. We are here to construct, maintain, operate and defend a world Canal, which runs through the heart of your country, and you have given us the necessary sovereignty and jurisdiction over the part of your country occupied by that Canal to enable us to do this effectively. We do not wish any further responsibility in respect to your Government than is necessary in the carrying out of our purpose to construct and maintain this Canal. We have no desire to add to the territory under our jurisdiction except as the operation of the Canal may require it. We have guaranteed your integrity as a Republic, and for us to annex the territory would be to violate that guaranty, and nothing would justify it on our part so long as Panama performed her part under the Treaty. I wish to make this statement as emphatic as possible, because irresponsible persons, without the slightest foundation of fact, have started the rumor that my visit to the Isthmus was for the purpose of preaching annexation, when nothing could be further from the truth. Panama cannot be too prosperous, cannot be too healthy, cannot be too strong a Government for the United States. And I know I speak the unanimous voice of the people of the United States when I say that they would be most reluctant to have to take over the responsibilities of government in this neighborhood, beyond that of the Canal Zone, and that they would feel utterly dishonored in so doing unless there was some conduct on the part of the Panamanian people which left them no other possible course. I am glad to say that there is not the slighest indication or probability that the Panamanian people will ever pursue a policy which will require such a change in the present most satisfactory relations between the two Republics.

Farewell Reception and Banquet.

The Canal Zone Federation of Women's Clubs will tender a farewell reception at Colon on November 26 to Mrs. Lorin C. Collins. Tickets have been sent to club members and they will be good for transportation on the train leaving Panama at 10.45 o'clock in the morning, and leaving Colon at 4.35 in the afternoon.

The Strangers Club of Colon will tender a farewell banquet at the clubhouse at 8.30 o'clock on the night of November 26 to Judge Lorin C. Collins, who leaves for the States on November 28, and will not return to the Isthmus.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Corozal, C. Z., on Sunday, November 27, 1910, at 7.30 p. m. The program follows:

1	March—*Columbia Phonograph Co*	Burton
2	Selection—*The Chocolate Soldier*	Straus
3	El Gitanillo—*Tango*	Franco
4	Overture—*Poet and Peasant*	Suppe
5	Intermezzo—*Silver Bell*	Wenrich
6	Medley Selection—*Popular Hits*	Alford
7	Waltz—*Bad'ner Mad'ln*	Komzak
8	Medley March—*Any Little Girl That's a Nice Little Girl*	Fischer
9	Selection—*Bohemian Girl*	Balfe
10	March—*Midshipman*	Laurendeau

CHAS E. JENNINGS, *Musical Director.*

The next concert will be given at Gorgona on Sunday, December 4, at 6 p. m.

Married.

OGOREK-MASTERSON—On November 14, in the Commission chapel, Cristobal, Fannie Elizabeth Masterson of Colon to John Ogorek of Cristobal, the Rev. A. A. Nellis officiating.

CANAL WORK IN OCTOBER.

Monthly Report of the Chairman and Chief Engineer to the Secretary of War.

CULEBRA, C. Z., November 15, 1910.

The Honorable the Secretary of War,
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of October, 1910:

Department of Construction and Engineering.

The following table summarizes the principal items of construction work accomplished by the Atlantic, Central and Pacific Divisions during the month:

ITEM.	Unit.	Atlantic.	Central.	Pacific.	Total.
Work excavation, dry	Cubic yards	118,327	1,591,723	17,283	1,727,333
Work excavation, wet	Cubic yards	549,788	....	507,873	1,057,661
Total work excavation	Cubic yards	668,115	1,591,723	525,156	2,784,994
Plant excavation, dry	Cubic yards	34,815	10,532	900	46,247
Plant excavation, wet	Cubic yards	28,791	....	24,350	53,141
Total plant excavation	Cubic yards	63,606	10,532	25,250	99,388
Total Canal excavation	Cubic yards	731,721	1,602,255	550,406	2,884,382
Material placed in dams	Cubic yards	740,351	....	54,370	794,721
Concrete laid	Cubic yards	94,364	....	83,581	177,945
Explosives used	Tons (Gross)	99.47	153.23	32.49	285.19
Rock drilled	Feet	84,275	374,934	39,923	499,132
Tracks removed	Miles	....	9.27	....	9.27
New tracks laid	Miles	2.85	15.93	1.80	20.58
Rock crushed	Cubic yards	78,080	371	67,065	145,516
Cement used	Barrels	93,581	32	85,540	179,153
New roads built	Miles	0.14	....	....	0.14
Water mains laid	Feet	7,185	2,415	445	10,045
Sewers laid	Feet	1,812	1,092	1,444	4,348
New drains and ditches dug	Feet	7,200	....	4,859	12,059
Average daily force	....	8 699	9,074	4,119	21,892
Average rainfall	Inches	13.42	13.09	12.27	14.39

Atlantic Division.

GATUN LOCKS.

Excavation—Shovel excavation during the month was confined to the lower chamber. A total of 102,796 cubic yards of material was removed. Of this amount, 19,349 cubic yards were excavated outside the limits of the Canal prism for the impervious back fill. The total material removed to date amounts to 5,411,253 cubic yards, of which 4,725,811 cubic yards have been removed from the Canal prism. The excavation is 92.6 per cent completed.

Receiving and Issuing Material—The receipts of material during the month were satisfactory in all cases.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)	12.11	12.00
Average hours per day worked per strand of cableway laying concrete and large stone	8.10	....
Average number of mixers per day	6.00	2.00
Average hourly output per mixer, cu. yds	50.73	63.00
Average amount of concrete and large stone laid per hour, per strand of cableway, cu. yds	30.77	....
Total number cu. yds. of large rock laid by cableways	5,255¼	....
Total number cu. yds. of concrete laid by cableways	46,960	....
Total number of cu. yds. of concrete from this plant laid by derrick	1,696	....
Total number of cu. yds. of concrete placed	....	30,639½
Total number of cu. yds. of large rock placed	....	3,158½
Total amount large rock and concrete handled, cu. yds.	53,911¼	*33,798

*Figures in table are for bucket measurement, which exceeded place measurement by 760¾ yards.

Concrete Work—There was an increase of 10,228 cubic yards in the amount of concrete laid, as compared with the figures for the preceding month. The daily average for the 26 working days was 3,344 cubic yards. The total amount of concrete placed during the month was 86,948½ cubic yards, in which there are included 8,413¾ cubic yards of large stone. Of the total new concrete, 34,133½ cubic yards were placed in the upper lock, and 52,815 cubic yards in the middle lock. The concrete work in the locks was 41.4 per cent completed at the end of October.

Receipts of Crushed Rock and Sand—The plant at Porto Bello shipped 124 barge loads of crushed rock, the total output for the month being 78,080 cubic yards. The plant at Nombre de Dios shipped 88 barges containing 44,691 cubic yards of sand.

Power Plant and Pumps—The operation of the power plant and pumps during the month was satisfactory.

Iron and Steel Work—The top castings for the upper guard and operating gates were placed. The setting of quoin posts at the lower gates to the upper locks was continued, and two "A" anchors for the safety chains above the lower gates of the upper lock were set.

Back Fill—The back fill was increased by 58,859 cubic yards, making the total placed at the end of the month 107,645 cubic yards. The back fill is 8.89 per cent completed.

Form Work—Three additional steel tower forms were moved into the middle chamber during October, and wooden forms were constructed for the upper portions of walls, Stoney gate valves, and culvert entrances.

GATUN DAM.

Construction during the month increased the total fill, as determined by cross section of the material in place, by 740,351 cubic yards, making a total in place of 10,595,365 cubic yards.

Hydraulic Fill—The dredges pumped 480,732 cubic yards of material into the Dam, making the total hydraulic fill to date 5,460,189 cubic yards. At the end of the month, the water surface in the hydraulic fill east of the Spillway was at elevation plus 56, and in the hydraulic fill west of the Spillway at elevation plus 31.7.

Dry Fill—A total of 259,619 cubic yards was added to the dry fill on the north and south toes of the Dam during the month, making a total dry fill in place of 5,135,177 cubic yards.

GATUN SPILLWAY.

Concrete—The construction of the east and west approach walls was continued, 7,415 cubic yards being placed, of which 181 cubic yards were bulk rock. The total concrete in place is 102,020 cubic yards.

Excavation—For the forebay and for the foundations of the approach walls 34,880 cubic yards of material were excavated, making a total Spillway excavation of 1,518,005 cubic yards.

Cut-off Levee—Construction of the levee from Spillway Hill to Mindi Hill was continued, and 697 cubic yards were placed in the fill, making a total of 177,158 cubic yards.

HARBOR AND CHANNEL SECTION.

Excavation below Sea Level at Mindi—On October 24, dredge *No. 86*, which had been transferred from Gatun Dam to Mindi, began to cut through the levee and excavated 40,168 cubic yards of earth in the levee and on the east side of the prism prior to the end of the month.

Dredging from the Ocean to Mindi—Six dredges removed 485,054 cubic yards of earth and 24,566 cubic yards of rock from the Canal prism. In addition, 7,441 cubic yards of rock were removed from the French canal, 2,800 cubic yards of earth from dock No. 2 at Gatun, and 16,492 cubic yards of earth and 2,058 cubic yards of rock from the slip to the cement dock at Gatun. On October 31, 1910, 40 feet of water could be carried from zero to zero plus 2,000 feet; 30 feet to mile 5 plus 700 feet; 20 feet to mile 5 plus 2,550 feet, the junction with the French canal.

PORTO BELLO.

PERFORMANCE OF ROCK CRUSHER PLANT.

	Hours.
Length of working day	12:00
Average number of hours worked per day	9:08
	Cu. Yds.
Average amount per hour of working day	250
Average hourly output for possible working time of 301 hours and 15 minutes	259
Average amount per working hour	329
Total for month	78,080
Maximum day's output	3,872

SAND, STONE AND CEMENT SERVICE.

In connection with this service, plant steamed 10,024 miles, handled 836 barges, and carried about 3,608 passengers.

COLON BREAKWATER.

At Toro Point, 38,452 cubic yards of material were excavated, of which 30,762 cubic yards were placed in the breakwater, the remainder being used for ballasting the tracks. The double-track trestle was extended 513 feet.

MUNICIPAL ENGINEERING.

The reservoirs, water mains, sewers, roads, and oil pipe lines were maintained and extended as required to facilitate construction work. Work was continued on the Colon municipal improvements.

Central Division.

During the month of October, the total amount of material excavated by the Central Division was 1,602,255 cubic yards, of which 525,577 cubic yards were classified as earth and 1,076,678 cubic yards as rock. Of this quantity, 1,598,335 cubic yards were removed by steam shovels, and 3,920 cubic yards by sluicing (contract). Of the total, 1,591,723 cubic yards were primary excavation for the Canal prism, and 10,532 cubic yards were for tracks not useful after the Canal is completed.

The daily average number of steam shovels at work during the month was 47.50, and the total number of shovel days was 1,235, as compared with 46.92 shovels at work during the month of September with 1,173 shovel days.

For comparison with the work done by steam shovels during the corresponding month of the previous year, the following table is given:

Period.	Excavated by shovels.	Classification of material.		Av. No of shovels at work.	W'k'g days.	Av. yards per shovel day.
		Rock.	Earth.			
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*			*C. Y.*
1909: Oct	1,510,760	1,190,304	320,456	47.23	26	1,230.1
1910: Oct	1,598,335	1,076,678	521,657	47 50	26	1,294.2

Rainfall at Empire: 1909, 21.13 ins.; 1910, 12.57 ins.

The above table shows the average output per shovel to be 5.21 per cent greater in October, 1910, than in the corresponding month of the previous year.

The total amount of material excavated from the prism in the Culebra section of the Central Division in October, 1910—1,320,314 cubic yards—was the greatest record in that section for the month of October, the next largest having been 1,302,901 cubic yards in October, 1909.

The total estimated amount of material to be removed in the Central Division was 97,125,018 cubic yards, and up to November 1, 1910, 64,913,538 cubic yards had been removed, leaving 32,211,480 cubic yards yet to be removed in order to complete all excavation in the Central Division. From these figures it will be seen that 66.84 per cent of all excavation in the Central Division had been completed up to the close of the month of October, and 33.16 per cent yet remained uncompleted.

Considering the two sections which compose the Central Division, the excavation completed and that yet to be completed at the close of October operations was as follows:

CULEBRA SECTION.

	Cubic Yards.
Completed	54,484,979
Yet to be completed	29,701,745

CHAGRES SECTION.

Completed	10,428,559
Yet to be completed	2,509,735

From the above figures it will be seen that the Culebra section is 64.72 per cent completed, and 35.28 per cent yet to be completed; the Chagres section is 80.60 per cent completed, and 19.40 per cent yet to be completed.

During the month 510 cubic yards of material were hauled from the Canal prism and dumped into the embankment for the roadbed of the relocated Panama railroad, in the vicinity of Pedro Miguel. The total amount of spoil from the Central Division used for this purpose to date is 3,714,828 cubic yards. The Central Division also delivered at Gatun 192,943 cubic yards of rock and earth for use in the construction of the Dam. The total delivered for this purpose to date is 2,178,542 cubic yards.

The daily average number of laborers at work on the whole division during the month was 8,179, and the daily average number of gold employes, 895.

Pacific Division.

DISTRICT NO. 1—LOCKS AND DAMS.

The total excavation during the month amounted to 18,183 cubic yards. Nothing was added to the dry fill in the west dam at Pedro Miguel, the total material in place at the close of the month remaining at 260,852 cubic yards. The back fill at Pedro Miguel was increased by 1,755 cubic yards, the total in place at the end of the month amounting to 18,276 cubic yards.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT PEDRO MIGUEL.

	Permanent Plant.	Auxiliary Plant.
Length of working day, hours	8.00	8.00
Average number of hours per day worked laying concrete and large stone (actual working time)	6.34	*9.76
Average number of mixers per day	3.93	1.31
	Cu. Yds.	*Cu Yds*
Average hourly output per mixer (actual working time)	78.70	43.34
Average amount of concrete and large stone laid per hour per chamber crane (actual working time)	77.07	....
Large rock laid	133.00	106.00
Concrete laid	54,624.00	6,559.00
Total concrete laid	54,757.00	6,665.00

Auxiliary plant consists of two 2-cubic yard mixers, and locomotive cranes and derricks as placing plant.

*This is the total number of hours of all plant units, divided by 26—the number of working days.

At Miraflores, 14,370 cubic yards were added to the dry fill in the toes, and 40,000 cubic yards to the hydraulic fill in the core of the west dam, making the total at the end of the month 561,679 cubic yards and 178,587 cubic yards, respectively. No material was added to the back fill, leaving the total amount in place at the end of the month 133,545 cubic yards.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT MIRAFLORES.

	Permanent Plant.	Auxiliary Plant.
Length of working day, hours	8.00	8.00
Average number of hours per day worked laying concrete and large stone (actual working time)	6.35	....
Average number of mixers per day	....	5.77
	Cu. Yds.	*Cu. Yds.*
Average hourly output per mixer (actual working time)	....	25.17
Average amount of concrete and large stone laid per hour, per crane (actual working time)	38.49	....
Large rock laid	246.00	351.00
Concrete laid	6,105.00	15,457.00
Total concrete laid	6,351.00	15,808.00

Permanent plant is one berm crane, placing concrete supplied from two 2-cubic yard auxiliary mixers installed in storage trestle.

Auxiliary plant is two 2-cubic yard and five ½-cubic yard mixers; concrete was dumped directly into forms from mixers, or taken to forms in dump cars.

PEDRO MIGUEL HANDLING PLANT.

The temporary mixer at the south end of the east storage trestle was completed about the middle of the month and was in use almost continuously after that time, furnishing concrete for the east head wall and the east forebay wall. There was no concrete mixed by the mixing plant at the south end of the west storage trestle, as the excavation in the southwest forebay was not completed. The concrete work at Pedro Miguel for October showed an increase of 10,158 cubic yards over the figures for September. The total amount placed was 61,422 cubic yards, including 239 cubic yards of large stone.

MIRAFLORES HANDLING PLANT.

Work at Miraflores was continued during October with the same plant which had been used during September. Work on the west storage trestle was continued and is 50 per cent completed. The total of concrete and large stone laid was 22,159 cubic yards, as compared with 18,133 cubic yards during September.

DISTRICT NO. 2—DREDGING.

The following is a statement of the output of the five dredges which were in operation during the month, and of the amount of material excavated hydraulically:

Dredge.	Type.	Work.		Plant.		Total.	Remarks.
		Earth.	Rock.	Earth.	Rock.		
		Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*	
Cardenas	Dipper	61,240	700	....	....	61,940	Place measurement
Badger	Ladder	16,968	36,400	....	....	53,368	Place measurement
Marmot	Ladder	29,327	20,135	24,350	....	73,812	Place measurement
Mole	Ladder	19,600	3,915	....	....	23,515	Place measurement
Culebra	Suction	279,588	....	....	....	279,588	Scow measurement
Total	....	406,723	61,150	24,350	....	492,223	
Hydraulic excavation	....	*40,000	....	....	....	40 000	Place measurement
Grand Totals	....	446,723	61,150	24,350	....	532,223	

* Excavated from lower lock site at Miraflores.

CHAMÉ SAND EXCAVATION.

Approximately 44,800 cubic yards of sand were excavated at Punta Chamé and delivered at Balboa.

BALBOA TERMINAL HARBOR.

A total area of 97,150 square feet on the site of the proposed terminal harbor at Balboa was cleared of brush and mangrove trees, and 6,375 square feet were grubbed.

HYDRAULIC EXCAVATION PLANT.

The plant as a whole has been in operation during the greater portion of the month, and the material pumped has been deposited in the west dam at Miraflores. The coffer-dams, which are to form a pool for the suctions at the central pumping station, are under construction and about 50 per cent completed.

DISTRICT NO. 3—MUNICIPAL AND SANITARY IMPROVEMENTS.

The reservoirs, water mains, sewers, and oil pipe lines have been maintained, and work has been continued on the municipal improvements in the city of Panama.

DISTRICT NO. 4—ANCON QUARRY.

The quarry operations for the month were retarded on account of the placing of the dust screen, which was almost completed on October 31, and expected to be in operation early in November.

PERFORMANCE OF ROCK CRUSHER PLANT.

	Hours.
Length of working day	9:00
Average number of hours per day (actual working time)	7:35
	Cu. Yds.
Average amount crushed per hour of working day	286.60
Average amount crushed per working hour	350.90
Total output for the month	67,065

Relocation of Panama Railroad.

During the month 241,089 cubic yards of

material were excavated, making the total excavation at the close of the month 4,786,642 cubic yards, and 296,780 cubic yards of material were placed in embankments, making a total of 10,042,638 cubic yards of material used for this purpose.

There are now 156,547 lineal feet of 70-pound rail, and 18,997 lineal feet of 90-pound rail in the permanent track, 1,131 lineal feet of 70-pound rail having been taken up during the month. The total force averaged 1,501 men.

Quartermaster's Department.

Labor—There is a surplus of all classes of unskilled labor.

Quarters—There has been a further increase in the number of bachelors at Gorgona, who have been taken care of by the removal of families to other towns, and by making use of the upper floor of the hotel and the upper floor of the court-house.

Building—The work at Toro Point was completed. A fire-proof storehouse was constructed at Colon Hospital, and a storehouse for obsolete material at Mount Hope.

Material and Supplies–A considerable quantity of material condemned on survey request has been shipped to the Mount Hope depot and placed in the storehouse for obsolete material. Such articles as can be made use of are repaired for reissue, and the balance will be sold. The Quartermaster's Department assumed the responsibility for the storehouse at Pedro Miguel.

Supplies during the month were received in 28 vessels, with cargo aggregating 40,658 tons. In addition, 662,986 feet B. M. of lumber, 252,920 lineal feet of piling, and 60,000 crossties were received. The value of all material received was $960,675.99.

Subsistence Department.

There was a net profit on the messes, kitchens and line hotels of $4,381.18, a net profit on the restaurants and penitentiary of $234.49, and a net loss of $223.18 on the Hotel Tivoli. All subsistence operations taken together showed a net profit of $4,392.49.

Department of Civil Administration.

COURTS.

Eleven civil and 30 criminal cases were disposed of in the Supreme and Circuit Courts; and 41 civil and 457 criminal cases in the District Courts.

DIVISION OF POSTS, CUSTOMS AND REVENUES.

Money order sales for October amounted to $429,211.70, and the fees to $1,862.05. Receipts from stamp and card sales, and newspaper postage, aggregated $6,170.48. The total collection of revenues made by the division was $15,991.98, and the collection on account of court fines, costs and fees, $3,233.60.

Seventeen vessels entered at, and the same number cleared from the port of Ancon; and 19 entered at and 17 vessels cleared from the port of Cristobal.

DIVISION OF POLICE AND PRISONS.

The total number of persons arrested was 474, which is 26 less than in September, and 144 less than in August. Eight convicts were committed to the penitentiary and nine were discharged, leaving 144 in confinement at the close of the month. The cost of guarding and subsisting the convicts was $2,500.09, and the value of their work on the Canal Zone roads $2,078.05.

DIVISION OF FIRE PROTECTION.

Three fires were reported, the total loss amounting to $303.00.

DIVISION OF PUBLIC WORKS.

In the city of Panama the average daily consumption of water was 1,117,299 gallons, and in Colon 978,497 gallons.

DIVISION OF SCHOOLS.

The Canal Zone schools were reopened on October 3. The teaching force consisted of 37 American and 24 West Indian teachers, as compared with 35 American and 21 West Indian teachers at the opening of the schools in October of last year. A comparison of the enrollment and average daily attendance in the schools during the month of October in 1908, 1909, and 1910 is as follows:

	1908.		1909.		1910.	
White children	622	492.7	745	638.3	931	802.0
Col. children....	1,073	695.5	1,067	672.2	906	611.0
Total	1,695	1,188.2	1,812	1,310.5	1,837	1,413.0

Department of Sanitation.

The total number of deaths from all causes among employes was 42. These were divided as follows: From disease, 23; from external causes, 19, giving the annual average per thousand of 10.19 for all causes. Dividing the causes of death into diseases and external causes, we would have an annual average per thousand of 5.58 and 4.61, respectively.

Among employes for October of previous years the annual average death rate per thousand is as follows:

1904	20.31
1905	32.85
1906	46.68
1907	25.97
1908	12.93
1909	9.95

The annual average per thousand of deaths in the cities of Panama, Colon, and the Canal Zone, including both employes and civil population, was 23.61.

The annual average per thousand among the same class of population for previous years was as follows:

1905	56.62
1906	46.40
1907	30.19
1908	27.91
1909	16.62

The increase in the death rate of October, 1910, over 1909, is due to the increase of infant mortality in the city of Panama due to intestinal disorders, the total of such deaths being 46 out of a total of 152 deaths charged to Panama.

Segregating the whites from the blacks, the annual average death rate per thousand from disease for employes was: For whites 4.51; blacks, 5.98, giving the general average of 5.58. For the same month in 1909, the annual average death rate per thousand from disease was: For whites, 3.16; blacks, 8.56, giving a general average of 7.35.

Among employes during October, 1910, deaths from the principal diseases were as follows: Malarial fever, 1; haemoglobinuric fever, 1; pneumonia, 7; tuberculosis, 3; dysentery, 2, leaving a balance of nine from other diseases, there being no deaths during the month from typhoid fever.

No cases of yellow fever, smallpox, or plague were brought to or originated on the Isthmus during the month.

Respectfully,
GEO. W. GOETHALS,
Chairman and Chief Engineer.

Examination for Superintendent of Construction.

Applications will be received up to the close of business on December 6 for an examination to be held shortly thereafter for the position of superintendent of construction, a vacancy having occurred at the United States Penitentiary, McNeil Island, Wash., at $5 a day. Subjects: Architectural construction and details, 50 per cent; training and experience, 50 per cent. Applicants should have had not less than three years' experience in architectural work as draftsman, superintendent, or supervisor of construction of buildings, and should possess a good practical acquaintance with details of construction and with shop or working drawings of planing mill work. Only those who comply with the specifications regarding training and experience will be admitted to the examination. Age limit, 20 years or over on the date of examination; applicants must be citizens of the United States. The above is all the information to be had on this examination. Applicants should apply for form 1312 and mention the kind of examination. JOHN K. BAXTER,
Secretary, Isthmian Civil Service Board.
Culebra, C. Z., November 19, 1910.

Personal.

Maj. G. M. Hoffman, with Mrs. Hoffman and their children, returned from his leave in the States on the *Colon*, which arrived at Cristobal on November 11.

Capt. Courtland Nixon, accompanied by Mrs. Nixon, returned from his leave of absence on the *Panama*, on Tuesday, November 22.

Examination for Colored Teachers.

There will be held at the Ancon schoolbuilding on Saturday, November 26, an examination for colored teachers. This examination is open to all. Time, 8 to 12 a. m., and 1 to 4 p. m. F. A. GAUSE,
Superintendent of Schools.

Order of Isthmian Conductors.

The next regular meeting of the Order of Isthmian Conductors will be held at Pedro Miguel at 1.30 p. m., Sunday, November 27.

F. H. ANDERSON, *Secretary and Treasurer.*
Pedro Miguel, C. Z., November 21, 1910.

Visit of Congressmen.

A party of Congressmen and their guests arrived on the Isthmus, on the *Ancon*, on November 20, and will leave for the States on the same ship, scheduled to sail on November 28. In the party are: James A. Tawney and his son; A. S. Burleson, W. M. Calder and Mrs. Calder, J. J. Fitzgerald and Mrs. Fitzgerald, Washington Gardner, J. Warren Keifer and his son, J. M. Miller and Mrs. Miller, W. H. Stafford, and Swager Sherley. Messrs. Tawney, Gardner, Keifer, Fitzgerald, Burleson and Sherley are members of the House Committee on Appropriations, and Messrs. Calder, Miller and Stafford, of the House Committee on Interstate and Foreign Commerce.

There arrived from New Orleans, on the *Turrialba*, on November 17, Congressmen F. B. Woods of Iowa, and Robert C. Wickliffe of Louisiana, who are visiting the Isthmus as guests of the World's Panama Exposition Company of New Orleans. Congressman A. J. Barchfield of Pennsylvania and his family are also on the Isthmus.

The members of the Committee on Appropriations and other Congressmen viewed the Canal work on Monday, Tuesday and Wednesday, and hearings on the estimates of appropriations for Canal work, conducted by the Committee, will begin at Culebra on Thursday.

The presentation of "Young Mrs. Winthrop" at the National Theatre in Panama by the Ancon Dramatic Club, which was set for November 18, has been postponed until November 25

OFFICIAL CIRCULARS.

Thanksgiving Day, a Holiday.

CULEBRA, C. Z., November 21, 1910.

CIRCULAR No. 360:

Thanksgiving Day, Thursday, November 24, 1910, will be observed as a holiday in the Canal Zone, and as far as practicable all public business will be suspended on that day. GEO. W. GOETHALS, *Chairman.*

Forms for Importations Free of Customs Duty.

CULEBRA, C. Z., November 14, 1910.

HEADS OF DEPARTMENTS AND DIVISIONS:

The following is quoted from a letter received from the General Superintendent of the Panama railroad, under date of November 12:

"In connection with making out of forms 164-C. E. covering importation of employes' shipments and their entry at Colon free of customs duties, it would greatly facilitate matters if the applicants' names were typewritten thereon, as our New York office advises in a great many instances they are having difficulty in deciphering signatures, in fact, some of them being so illegible that they have to guess at the names, the result being that at times shipments are billed at tariff rates, whereas reduced rates should be applied."

It is desired that employes be instructed to have these forms made on the typewriter where possible, or at least write their names plainly.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Time Served on Committees of Employes' Organizations.

CULEBRA, C. Z., November 16, 1910.

CIRCULAR No. 132-1:

In the future when official committees representing organizations of employes visit the Chairman and Chief Engineer, the division engineers, or other officials in authority, on business connected with the organization to which they belong, no pay will be allowed for time lost from work, but the time so lost will neither be deducted from their regular leaves nor be charged against them in computing the dates when their vacations fall due. GEO. W. GOETHALS,
Chairman and Chief Engineer.

Conductor on Track Shifters.

CULEBRA, C. Z., November 16, 1910.

CIRCULAR No. 299-H:

When track shifters are not required to move over the main line, but are used on inside tracks only, the engineer in charge may act as conductor. If this additional responsibility is imposed, the pay of the position may be increased to $150 a month.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending November 30, 1910 (75th meridian time):

DATE.	High.	Low.	High.	Low.	High.
	A. M.	A. M.	A. M.	P. M.	P. M.
November 24...	......	3.20	9.24	3.48	10.07
November 25...	......	4.30	10.40	4.57	11.18
November 26...	......	5.41	Noon 12.00	6.03	......
November 27...	12.25	6.45	P. M. 1.08	7.05	......
November 28...	1.22	7.38	2.02	7.56	......
November 29...	2.09	8.22	2.47	8.40	......
November 30...	2.48	9.03	3.23	9.20	......

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal, Colon and Balboa during the week ending November 19, 1910.

Prinz Joachim, November 13, from New York, with 340 barrels sulphate of alumina for stock.

Beachy, November 14, from Tacoma, with 409 pieces piling for Atlantic Division; 81,626 feet Douglas fir lumber for Central Division; 1,543,138 feet Douglas fir lumber, 4,871 sawn pine switch ties, 33,484 sawn pine cross-ties, 13 cases blasting caps for stock.

In tow of the tug *Luckenbach*, November 15, from Newport News, 2 steel barges for Atlantic Division.

Advance, November 17, from New York, with 63 crates fire brick, 9 pieces shafting, 27 pieces castings for Atlantic Division; 40 pieces castings for Central Division; 400 bundles brake shoes, 268 pieces rounds, 380 pieces castings for Mechanical Division; 1 ambulance for Sanitary Department; 228 bags smelting coal, 500 garbage cans, 300 barrels white lead, 34 barrels rosin, 200 bags plugs, 10 cases printing paper, 88 cases caustic soda, 35 barrels wool waste, 50 packages iron valves and fittings, 334 bars iron for stock; and a miscellaneous cargo, the whole consisting of 3,108 packages weighing 381 tons.

Turrialba, November 17, from New Orleans, with 77,101 feet yellow pine lumber, 32 bundles cypress shingles, 22 bundles car parts, 48 pieces castings, 11 pieces steel cable for Atlantic Division; 38,656 feet yellow pine lumber for Central Division; 741 bales prairie hay, 8,219 feet oak lumber, 10 crates gate valves, 40 bales rice straw for stock.

Zacapa, November 17, from New York, with 54 tons lock construction material for Pacific Division; 167 cases candles, 54 crates range parts, 83 drums car oil, 36 drums calcium carbide, 9 barrels bolts, 80 crates handles for stock.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, November 19. All heights are in feet above mean sea level:

DAY AND DATE	STATION.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun. Nov. 13...	130.2	95.8	49.2	21.2	20.4
Mon. Nov. 14..	128.9	95.4	49.4	20.3	19.8
Tues. Nov. 15..	128.6	94.5	47.7	19.4	19.1
Wed. Nov. 16..	128.5	94.8	48.6	18.9	18.5
Thurs. Nov. 17.	130.4	95.6	49.1	18.7	18.2
Friday, Nov. 18	129.6	95.2	49.1	18.3	17.8
Sat. Nov. 19...	129.4	95.2	48.7	17.9	17.4
Height of low water.......	125.0	92.0	46.0		

Rainfall from November 1 to 19, Inclusive.

MIDNIGHT TO MIDNIGHT.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon....................	.67	4	2.17
Balboa....................	.54	4	1.89
Miraflores....................	1.07	13	5.14
Pedro Miguel....................	1.94	11	5.03
Rio Grande....................	3.25	11	5.99
Central Section—			
Culebra....................	1.62	11	4.97
Camacho....................	1.96	12	6.49
Empire....................	1.44	11	3.92
Gamboa....................	3.02	11	7.97
Alhajuela....................	1.48	16	7.37
El Vigia....................	1.27	16	7.78
Gorgona....................	1.48	6	5.90
San Pablo....................	2.98	11	6.98
Tabernilla....................	2.79	11	7.40
Bohio....................	3.13	11	12.93
Monte Lirio....................	2.50	4	15.99
Atlantic Section—			
Gatun....................	3.69	7	15.22
Brazos Brook....................	4.02	1	15.17
Cristobal....................	2.85	11	15.01
Porto Bello....................	3.89	4	*13.71
Nombre de Dios....................	4.58	4	8.84

*To 5 p. m., November 18.

Reservations on the Ancon.

All accommodations on the steamship *Ancon*, scheduled to sail from Cristobal on November 28, having been reserved for the members of the Congressional Committee on Appropriations, no further requests for this sailing will be issued to employes or their families.

Any reservations that may have been made for this sailing on requests issued prior to this date are hereby cancelled, and in such cases arrangement should be made for passage on another steamer.

By direction of the Chairman.

C. A. McILVAINE, *Chief Clerk.*

Culebra, C. Z., November 16, 1910.

Proposals for Excavation in Canal Prism.

OFFICE OF CHIEF QUARTERMASTER,
CULEBRA, C. Z., November 2, 1910.

Sealed proposals for excavation of about 112,450 cubic yards of earth located at point 4-B, mile 29, on the Chagres River, will be received here until December 1, 1910, and then opened. Full information will be furnished by the division engineer, Empire, Canal Zone. Envelopes containing proposals must be endorsed "Proposals for excavation in Canal prism", and addressed C. A. DEVOL,
Chief Quartermaster

Proposals for Excavation, Obispo Diversion.

Sealed proposals for excavation of about 21,942 cubic yards of earth, located between stations 1602 and 1612 on the east bank of the Canal, will be received until 2 p. m., December 15, 1910, and then opened. Full information will be furnished by the division engineer, Empire. Envelopes containing proposals must be endorsed "Proposals for Excavation, Obispo Diversion," and addressed C. A. DEVOL, *Chief Quartermaster.*

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Allianca.............	P. R. R...	Tuesday....	Nov. 22
Colon...............	P. R. R...	Monday....	Nov. 28

CRISTOBAL TO NEW YORK.

Panama.............	P. R. R...	Monday....	Nov. 28
Ancon...............	P. R. R...	Monday....	Nov. 28
Allianca.............	P. R. R...	Sunday....	Dec. 4
Colon...............	P. R. R...	Saturday...	Dec. 10
Advance.............	P. R. R...	Friday.....	Dec. 16
Panama.............	P. R. R...	Thursday...	Dec. 22
Allianca.............	P. R. R...	Wednesday.	Dec. 28
Colon...............	P. R. R...	Tuesday....	Jan. 3
Advance.............	P. R. R...	Tuesday....	Jan. 10
Panama.............	P. R. R...	Monday....	Jan. 16

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 4th and 25th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage thses ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Almirante...........	U. F. C...	Thursday...	Nov. 17
Prinz Aug. Wilhelm...	H.-A......	Saturday...	Nov. 19
Santa Marta.........	U. F. C...	Thursday...	Nov. 24
Clyde...............	R.-M.....	Saturday...	Nov. 26
Sarnia..............	H.-A......	Saturday...	Nov. 26
Metapan............	U. F. C...	Thursday...	Dec. 1
Prinz Joachim........	H.-A......	Saturday...	Dec. 3
Zacapa..............	U. F. C...	Thursday...	Dec. 8
Thames.............	R.-M.....	Saturday...	Dec. 10
Sibiria..............	H.-A......	Saturday...	Dec. 10
Almirante...........	U. F. C...	Thursday...	Dec. 15
Santa Marta.........	U. F. C...	Thursday...	Dec. 22
Tagus...............	R.-M.....	Saturday...	Dec. 24
Metapan............	U. F. C...	Thursday...	Dec. 29

COLON TO NEW YORK.

Zacapa..............	U. F. C...	Thursday...	Nov. 24
Thames.............	R.-M.....	Monday....	Nov. 28
Sibiria..............	H.-A......	Tuesday....	Nov. 29
Almirante...........	U. F. C...	Thursday...	Dec. 1
Prinz Aug. Wilhelm...	H.-A......	Tuesday....	Dec. 6
Santa Marta.........	U. F. C...	Thursday...	Dec. 8
Tagus...............	R.-M.....	Monday....	Dec. 12
Sarnia..............	H.A......	Tuesday....	Dec. 13
Metapan............	U. F. C...	Thursday...	Dec. 15
Prinz Joachim........	H.-A......	Tuesday....	Dec. 20
Zacapa..............	U. F. C...	Thursday...	Dec. 22
Oruba...............	R.-M.....	Monday....	Dec. 26
Almirante...........	U. F. C...	Saturday...	Dec. 29

NEW ORLEANS TO COLON.

Abangarez...........	U. F. C...	Saturday...	Nov. 19
Atenas..............	U. F C...	Saturday...	Nov. 26
Turrialba............	U. F. C...	Saturday...	Dec. 3
Abangarez...........	U. F. C...	Saturday...	Dec. 10
Atenas..............	U. F. C...	Saturday...	Dec. 17
Turrialba............	U. F. C...	Saturday...	Dec. 24

COLON TO NEW ORLEANS.

Turrialba............	U. F. C...	Thursday...	Nov. 24
Abangarez...........	U. F. C...	Thursday...	Dec. 1
Atenas..............	U. F. C...	Thursday...	Dec. 8
Turrialba............	U. F. C...	Thursday...	Dec. 15
Abangarez...........	U. F. C...	Thursday...	Dec. 2
Atenas..............	U. F. C...	Thursday...	Dec. 29

COLON TO BARBADOS, CALLING AT TRINIDAD.

Clyde...............	R.-M.....	Tuesday....	Dec. 6
Thames.............	R.-M.....	Tuesday....	Dec. 20
Tagus...............	R.-M.....	Tuesday....	Jan. 3

The next sailing of the Leyland Line will be as follows: *William Cliff*, on or about November 26, for New Orleans, via Kingston, Ja.

Hamburg-American steamers leave for New York every Tuesday at 10 a. m., arriving there the following Tuesday, and for Port Limon every Tuesday or Wednesday via Bocas del Toro or Puerto Colombia.

Royal Mail steamers leave for New York on alternate Mondays at 5 p. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans leave on Thursday at 3 p. m., and for New York on Thursday at 11 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3rd and 20th of each month.

LOST—At Bas Obispo, on Sunday morning, November 13, a pocket book containing a pair of prayer beads and some silver money. Finder please return the beads to Mrs. Wm. E. Wade, Pedro Miguel, C. Z.

LOST—A raincoat with two buttons missing, on Panama railroad special from Paraiso to Colon, on November 15, in second car from front. Suitable reward to finder. A. D. WEBB, Gatun, C. Z.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, NOVEMBER 30, 1910. No. 14.

The Canal Record

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Address all Communications
THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Addition to Corozal Recreation Hall.

Bids were opened in the office of the Constructing Quartermaster on November 12 for the erection of an addition 35 by 60 feet to the north side of the recreation hall at Corozal, which has recently been placed under the supervision of the Canal Zone Y. M. C. A. Four proposals for doing the work were received, as follows: James Preston Moore, $850; James A. Wilson, $690; E. R. Martin and R. Wilkinson, $600; A. Hinselmann, $499. Mr. Hinselmann, the low bidder, was awarded the contract, and is to furnish the labor only, the Commission supplying all materials.

The Boilermakers.

Of the 122 first-class boilermakers in the normal force at Gorgona shops, 11 were at work on Tuesday. Over half of the men who quit work on November 22 have returned to the States. Eight sailed on the *Advance* for New York on the 22d; 22 on the *Turrialba*, and one on the *Cartago* for New Orleans, and one on the *Zacapa* for New York, on the 24th; 10 on the *William Cliff* for New Orleans on the 26th; 42 on the *Panama* for New York on the 28th; and nine on the *City of Para* for San Francisco on the 29th. Thirty authorizations for reduced rates on various steamships sailing between this date and December 11 have been issued. The recruiting of men to take the place of those who have resigned continues.

On November 26, the following cable message was received from the Washington office of the Commission:

> GOETHALS, CULEBRA: The following telegram from Hinsman, National Headquarters, Boilermakers' Union, Kansas City, Kan.:
>
> "Upon advice from President Franklin I have instructed boilermakers in Canal Zone remain at work and await President Taft's reply for reasonable length of time."
>
> BOGGS.

Increase in Leave of Hourly Employes.

HEADS OF DEPARTMENTS AND DIVISIONS:

Cable advice has been received that the President has mailed his decision on the request of the hourly men for longer leave with pay. The following extract from cablegram is quoted for your information:

> "Beginning January 1. 1911, hourly men will be granted four weeks' leave yearly with pay. Also may postpone two weeks to following year, permitting six weeks' leave with pay in second year. Accumulative leave recently granted monthly men on account discharge reduction of force should apply also to hourly men."

This letter is not to be taken as the official promulgation of the above order, as the President's letter has not been received, but is given you simply for your advance information, and the Chairman states that the information may be made public.

C. A. MCILVAINE, *Chief Clerk.*

Culebra, C. Z., November 25, 1910.

Improved School Facilities at Cruces.

A schoolbuilding of the Commission type will be provided for the 51 children enrolled at Cruces, a native town in the Canal Zone, situated on the Chagres River about four miles above the railroad bridge at Gamboa. The efforts made in the past toward maintaining a school at this point have not met with much success, due largely to the lack of suitable accommodations, and to the fact that an English teacher was employed, whereas all the children speak Spanish. This year a Spanish male teacher from Peru, Señor Ricardo Arteaga, was engaged to conduct the school, and as the result, there has been a marked increase in attendance, as well as a greater showing of interest on the part of the villagers. During the month of June, the last month of the 1909-10 school year, the attendance at the Cruces school was seven. The attendance for October, the first month of the present term, was 40; average attendance, 30; per cent of attendance, 90; neither absent nor tardy, 20. The school opened on October 10. Heretofore, the school has been conducted in the old church, which has recently shown signs of falling in. The plans for the new schoolhouse provide for a one story frame building, with a corrugated iron roof, 36 feet long by 24 feet wide, divided into a classroom, 24 by 28 feet, and a combination living room and bedroom for the teacher, 8 by 24 feet.

Panama-David Railroad Survey Completed.

The survey for the proposed Panama-David railroad, and its branch lines, has been completed, and the data thus procured, together with the necessary maps, is being incorporated into a report which will be ready early in December. The total length of the line and its branches, as covered by the survey, is approximately 350 miles. This includes the main line extending from Empire, C. Z., to David, in the province of Chiriqui, 280 miles long; a branch line about 65 miles long, from a point near the Santa Maria River, which forms the boundary between Coclé and Los Santos provinces, to Pedasí, in the province of Los Santos; and a branch line, about four miles in length, from Penonomé to Anton, in the province of Veraguas. The survey was conducted by field parties from the engineering department of the Panama railroad; was begun on April 1, 1910, and completed on November 15, 1910. Each field party was assigned to about 70 miles of territory.

Manufacture of Lock Gates Begun.

The manufacture of the 46 mitering gates required for the Canal locks, together with certain fixed and spare parts therefor, the whole involving the use of about 58,000 tons of steel, was begun by the contractors, the McClintic-Marshall Construction Company of Pittsburg, in the last week in October. As a large part of the material called for by the specifications was of special design, about $100,000 worth of additional machinery for its fabrication had to be installed. One-half of the company's shops at Rankin, Pa., is engaged in the execution of the contract, and the first shipment of material is expected to leave Baltimore the latter part of this month, or early in December. The heaviest single pieces of steel will weigh about 18 tons. These will be the lowest girders, seven feet deep. The series of girders above them will range from 3.8 feet apart near the bottom to five feet apart at the top, and over the skeleton structure thus formed, a sheathing of water-tight plate will be riveted like the sheathing of a vessel. The thickness of the plates will range from an inch at the bottom to 7-16 of an inch at the top. Each gate consists of two leaves. The weight of the largest leaf will be about 600 tons, and the leaves will be 47⅓ to 82 feet high, 65 feet long, and seven feet deep. The thousands of individual pieces will be numbered and fitted prior to shipment, so that they will go together as easily as children's blocks. It is purposed to begin the erection of the gates at Gatun Locks in January, and those at Pedro Miguel in March. The contractors will bring about 400 of their own men to the Isthmus for this work.

Ditching Machine For P. R. R. Relocation.

A railroad ditching machine, manufactured by the American Hoist and Derrick Company of St. Paul, Minn., for use on the relocated line of the Panama railroad was placed in service last week. It is the only machine of its kind on the Isthmus, is designed to operate over the tops of the flat cars of a work train, and is self-propelling, traveling on two portable track sections, which it transfers from one car to another, as it proceeds with its work. These track sections are telescopic, and as the wheels on the machine are of double tread, with center flange, they are able to travel on either section. The ditcher moves in either direction along the tops of the cars from one end of the train to the other, loads a car, then picks up one section of track, which it swings to position on the car immediately in the rear of the one on which it is standing. It then propels itself to the transferred section and loads the car at the point from which the

NOTES OF PROGRESS.

(*Continued.*)

transferred section has been removed, continuing the process until the train is loaded. The machine is equipped for using either a 9-16-yard dipper, or a clamshell bucket of the Haywood patent, having ¾-yard capacity. Ditches as narrow as the width of the shovel, beginning at the end of the ties, or as wide as 31 feet 6 inches from the center of the track can be dug to a depth of five feet below the top of the rail, or as shallow as desired, with any width of shoulder. The machine can also be used as a steam shovel, handling material at a maximum rate of 90 cubic yards an hour, can load coal, ties, or rail, and with certain changes, can be converted into a locomotive crane or piledriver. It is provided with a set of auxiliary wheels of 5-foot gage, in order that it can be used on a surface track when desired. It will be employed on ditching work along the relocation on flat cars fitted with low sideboards, which will be unloaded by No. 3 Lidgerwood unloaders operating center plows. The machine does the work of a large gang of laborers and its operation requires the services of only two men, an engineer and his fireman.

Instruction of Engineer Lieutenants.

Eleven graduates of the class of 1910 at West Point, who have been assigned to the Corps of Engineers, U. S. A., have arrived on the Isthmus and reported to the Chief Engineer for professional instruction covering a period of about seven months. They are Second Lieutenants Frederick S. Strong, Jr., Creswell Garlington, William C. Sherman, Daniel D. Pullen, Carey H. Brown, Oscar N. Sohlberg, Beverly C. Dunn, Donald H. Connolly, Raymond F. Fowler, James G. B. Lampert, and David McCoach, Jr.

Lidgerwood Unloaders in October.

LOCATION.	No. of unloaders.	No. of trains.	No. of cars.
Balboa	3	885	17,700
Miraflores	3	656	13,120
Gamboa	2	618	12,264
Tabernilla	2	485	9,700
Total	10	2,644	52,784

Ancon Crusher.

A statement of the rock crushed at Ancon quarry during the week ending November 26, follows:

DATE.	Hours worked.	Cubic Yards.
November 21	7:20	2,478
November 22	7:05	2,342
November 23	6:35	1,785
November 24—Holiday		
November 25	8:00	2,710
November 26	7:10	2,502
Total	36:10	11,817

Passports for Deck Passengers.

Circular No. 55, issued from the office of Señor Federico Boyd, the Panamanian Secretary of Foreign Affairs, under date of October 26, 1910, states that the business of recruiting men who are employed in the service of the Isthmian Canal Commission continues, notwithstanding the measures adopted by the Panamanian Government to stop it, and in order still further to limit the practice, suggests that the agents of steamship companies in Panama and Colon refuse to furnish passage to any person who cannot exhibit a passport issued in his favor by the Consul of the country to which he belongs, and in case there is no such Consul resident, then by the Consul of some friendly nation. Attention is further called to the fact that such passports to be valid should be issued by consular officials recognized as such by the Panama Government. The above refers only to persons living on the Isthmus soliciting deck passage on steamships bound for foreign ports, and has no application to people purchasing cabin passage.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Concrete work in Gatun Locks is about 44 per cent completed, 912,890 cubic yards out of a total of 2,085,000 having been placed at the close of work on November 26. The output for the auxiliary plant which had been reduced for several days on account of the necessity of using the narrow gage equipment in taking out the slide, which occurred at the south end of the locks on November 9, was restored to normal during the week.

A statement of the amount of concrete placed in the locks each day for the week ending November 26, and of the total, follows; and a similar statement for the work in the Spillway of Gatun Dam is published elsewhere in this issue:

DATE.	CONSTRUCTION PLANT. 2-Cubic yard mixers.			AUXILIARY PLANT. 2-Cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
November 21	2,036	34:18	6	596	9:40	2	200¾	2,846¾
November 22	1,618	27:47	6	694	11:40	2	257¼	2,591¼
November 23	1,648	26:35	6	690	11:40	2	199	2,569
November 24—Holiday								
November 25	2,168	34:50	6	928	12:40	2	349¼	3,458¼
November 26	1,974	32:37	6	856	12:40	2	372½	3,229½
*Portable mixer				108				
Total	9,444			3,872			1,378¾	14,694¾
Previously reported								898,196
Grand total								912,890¾

*The 108 yards shown for the portable ⅓-yard mixer were placed on the following days, and are included in the total shown for each day: November 21st, 14 yards; November 22d, 22 yards; November 23d, 32 yards; November 25th, 13 yards; November 26th, 27 yards.

PEDRO MIGUEL LOCKS.

One-half of the concrete necessary for the construction of the locks at Pedro Miguel had been placed at the close of work on Monday, November 21, and on Saturday, November 26, concrete laying was over 51 per cent completed, 429,855 having been placed out of a total of 837,400 cubic yards. The record for the five 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-Cubic yard mixers.			AUXILIARY PLANT. 2-Cubic yard mixers.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
November 21	3,048	37:00	4	796	17:00	2		3,844
November 22	1,986	26:00	4	572	13:50	2		2,558
November 23	1,854	29:67	4	496	11:00	2	12	2,362
November 24—Holiday								
November 25	2,326	30:00	4	512	12:50	2	2	2,840
November 26	2,098	27:00	4	424	10:00	2	18	2,540
Total	11,312	149:67	4	2,800	64:00	2	32	14,144
Previously reported							3,737	415,711
Grand total							3,769	429,855

MIRAFLORES LOCKS.

The record of concrete placed in the upper lock at Miraflores during the five 8-hour working days of the week ending November 26, and of the total to that date, follows:

DATE.	AUXILIARY PLANT.										Total.
	2-Cubic yard mixers.			½-Cubic yard mixers.			⅓-Cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
Nov. 21	820	15:00	2	653	31:50	4	129	9:50	1	118	1,720
Nov. 22	448	8:00	2	372	24:00	4	67	7:00	1	55	942
Nov. 23	560	9:67	2	420	21:00	3	61	8:00	1	20	1,061
Nov. 24	Holiday										
Nov. 25	504	8:83	2	395	20:75	4	38	6:50	1	15	952
Nov. 26	464	7:00	2	467	27:50	4	98	8:00	1	27	*1,061
Total	2,796	48:50	2	2,307	124:75	3.75	393	39:00	1	235	5,736
Previously reported										1,622	66,763½
Grand total										1,857	72,499½

*Includes 5 cubic yards laid by hand.

STEAM SHOVEL RECORDS.

Work of Central Division Shovels in October.

During the month of October the total amount of material excavated in the Central Division was 1,602,255 cubic yards, of which 525,577 cubic yards were classified as earth, and 1,076,678 cubic yards as rock. Of this quantity, 1,598,335 cubic yards were removed by steam shovels, and 3,920 cubic yards by sluicing under contract.

The high record for the month was made by shovel No. 212, working 26 days in the Culebra district, which excavated 50,825 cubic yards of rock and earth. The second best record of the month was made by shovel No. 228, working 26 days in the Empire district, which excavated 46,624 cubic yards of rock and earth. The best record for a shovel of the 70-ton class was made by shovel No. 108, working 25 days in the Chagres district, which excavated 37,585 cubic yards of rock and earth.

Shovel No. 212, working in the Culebra district, made the high record for one day by excavating 2,964 cubic yards of rock and earth on October 14. Shovel No. 108, working in the Chagres district, excavated 1,750 cubic yards of earth on October 3, and this is the high record for one day for shovels of the 70-ton class, during the month.

Except where noted, monthly reports are computed by place measurement, while the daily reports are based on car measurement. The best records for the month and one day are shown below:

BEST RECORDS FOR THE MONTH.

CHAGRES DISTRICT.

Shovel No.	Cubic Yards.			No. of days at work.
	Earth.	Rock.	Total.	
108	36,085	1,500	37,585	25
104	36,078	....	36,078	25

EMPIRE DISTRICT.

228	46,624	....	46,624	26
216	44,164	....	44,164	26

CULEBRA DISTRICT.

212	25,411	25,414	50,825	26
208	18,679	24,887	43,566	25

BEST RECORDS FOR ONE DAY.

Shovel.	Location.	Date.	Character of material excavated.	Cubic yards.
108	Chagres	Oct. 3.	Earth	1,750
108	Chagres	Oct. 17.	Earth	1,680
104	Chagres	Oct. 17.	Earth	1,680
222	Empire	Oct. 5.	Earth and rock	2,434
216	Empire	Oct. 15.	Rock	2,414
212	Culebra	Oct. 14.	Earth	2,964
208	Culebra	Oct. 8.	Rock	2,831
231	Pedro Miguel.	Oct. 17.	Rock and earth	2,337
231	Pedro Miguel.	Oct. 15.	Rock and earth	2,280
109	Pedro Miguel.	Oct. 8.	Earth	1,130

Missing Men.

Information is desired by R. C. Thatcher, Toro Point, C. Z., regarding the whereabouts of Wm. G. Minkler, who is supposed to be working on the Isthmus.

Any one having information regarding the whereabouts of Herman Christensen, a painter, who left the service of the Isthmian Canal Commission on July 21, 1909, will please communicate with the office of the Chairman and Chief Engineer, Culebra, C. Z.

Any one having information regarding the present whereabouts of William Martin, known by the name of "Big Bill" Martin, who is supposed to be in the Canal Zone, is requested to communicate with W. P. Hiscock, Empire.

Any one having information regarding the whereabouts of Ed. Anderson, at one time employed on the Isthmus, is requested to communicate with either Mrs. Ernest Hawk, Negaunee, Mich., or Dominic Lavigne, Empire, C. Z.

Any one having information regarding the whereabouts of Mr. E. B. Lawyer, who is supposed to be on the Isthmus, is requested to communicate with Mrs. Minnie Lawyer, 4203 Central avenue, Madisonville, Ohio.

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the week ending November 26, follows:

Date.	Hours worked.	Cubic Yards.
November 21	9:18	3,424
November 22	8:36	2,471
November 23	8:12	3,039
November 24—Holiday		
November 25	8:43	2,549
November 26	11:14	3,679
Total	46:03	15,162

PERSONAL.

Lieut-Col. Wm. L. Sibert sailed on the *Turrialba* for New Orleans on November 24, on his annual leave of absence.

Lieut.-Col. John L. Phillips, with Mrs. Phillips and Miss Phillips, returned from his leave of absence in the States on the *Panama*, which arrived at Cristobal on November 22.

The Honorable H. G. Knowles, American Minister to Bolivia, accompanied by Mrs. Knowles, arrived on the Isthmus on November 25, and sailed for his post on Tuesday, November 29.

Mr. W. B. Corse sailed for New York on the *Panama*, on Monday, November 28, on his annual leave of absence.

Mr. W. G. Bierd, formerly general manager of the Panama Railroad Company, has been made vice-president and general manager of the Minneapolis and St. Louis Railroad Company, with headquarters at Minneapolis.

Mr. A. L. Robinson returned from his annual leave in the States on November 28.

The members of the Committee on Appropriations of the House of Representatives concluded the hearings on the Isthmus last week, and sailed for New York on the *Ancon* on November 27.

Relocation of Panama Railroad.

The performance of steam shovels on the relocation of the Panama railroad in October, as compared with other months, is shown in the following statement:

Month.	Output.	Average No of shovels	No. of working days.	Output per shovel.	
				Per day.	Per month.
	Cu. Yds.			*Cu Yds.*	*Cu. Yds.*
January	206,334	8.24	25	1,002	25,040
February	214,411	7 91	23	1,179	27,106
March	234,571	7.31	26	1,234	32,089
April	212,097	7.15	26	1,140	29,648
May	212,135	7.88	25	1,077	26,921
June	236,689	8.00	26	1 138	29,586
July	197,069	7.44	25	1,060	26,488
August	250,341	7.04	27	1,318	35,575
Sept	194,371	5.62	25	1,281	34,585
Oct	238,349	6.00	26	1,528	39,725

BEST RECORDS FOR OCTOBER.

Shovel No.	Cubic Yards.		
	Earth.	Rock.	Total.
257	7,900	45,109	53,009
121	32,440	12,160	44,600
123	10,396	31,154	41,550

Obituary.

The Rev. Joshua Heath Sobey died at the home of his son in Watkins, New York, on November 5. He was a chaplain in the employ of the Commission from 1907 until the time of his final illness. He had done missionary work for the Baptist church in Jamaica, the Cayman Islands, and Costa Rica. He is survived by his wife and two sons, Rev. Wilfred Heath Sobey of Watkins, and Melville M. Sobey of Hudson, N. Y.

LABOR FORCE AND QUARTERS IN OCTOBER.

On October 26, there were 35,334 employes actually at work on the Canal and the Panama railroad, and of that number 29,693 were Canal employes. The gold force on the Canal work, composed almost entirely of white Americans was 4,596.

The report of the Chief Quartermaster in October shows that the number of family quarters occupied by "gold" employes was 1,731, which is 27 more than in September, and the occupants numbered 5,362, an increase of 141. Of this number, 1,812 were women, and 1,803 children. Bachelor quarters occupied by "gold" employes numbered 1,948, and the occupants numbered 3,488, of whom 203 were women. The family quarters occupied by European laborers numbered 272, and the occupants, 865; bachelor quarters, 113, and the number of occupants, 5,375. The family quarters occupied by West Indians numbered 1,089, and the occupants, 3,584; bachelor quarters, 270, and the number of occupants, 4,860. A statement of the force actually at work on October 26, follows:

Department.	Silver Employes.													Total Silver.	Total Gold.	Grand Total.
	Monthly.	Artisans.					European Laborers.		West Indian Laborers.							
		44 cents.	32 cents.	25 cents.	20 cents.	16 cents.	20 cents.	16 cents.	20 cents.	16 cents.	13 cents.	10 cents.	7 cents.			
Const'ct'n and Eng'r'ng	4,431	15	24	257	653	2,655	3,220	1,532	112	611	3,255	3,543	271	20,579	3,456	24,035
Civil Administration	185	..	..	2	3	18	......	......	...	.....	......	5	....	213	334	547
Sanitation	659	..	..	2	3	3	3	2	...	.....	6	350	8	1,036	404	1,440
Quartermaster's	1,000	3	2	94	202	1 1	186	77	16	.....	12	877	13	2,643	226	2,869
Subsistence	611	..	..	1	1	.....	......	.....	...	.....	......	......	....	613	62	675
Disbursements	8	..	..	....	....	......	......	.....	...	.....	......	......	....	8	20	28
Examinat'n of Accounts	5	..	..	....	....	.....	......	......	...	.....	.....	......	....	5	94	99
Total	6,899	18	26	356	862	2,837	3,409	1,611	128	611	3, 73	4,775	292	25 097	4,596	29,693

Panama railroad force, 3,129; Panama railroad relocation force 1,485; Panama railroad commissary force, 1,027. Total, 5,641. I. C. C. force, 29,693. Grand total, 35,334.

BASEBALL.

Panama Canal Baseball League with Six Clubs Organized for Coming Season.

Representatives of the six local baseball associations held a meeting at the University Club in Panama on Sunday, November 6, and organized the Panama Canal Baseball League. Officers were elected, as follows: President, Maj. Eugene T. Wilson; vice-president, S. B. Williamson; secretary and treasurer, Milton S. Hathaway. An executive committee will be appointed by the president of the league in a few days, which will have in charge the preparation of the schedule of games for the ensuing season. The league will consist of the following clubs: Ancon, Empire, Gorgona, Camp Elliott, Commissary-Subsistence, and Colon-Cristobal. The first four teams comprised the Isthmian League of last year. The last two teams are to be made up of the best of the players in last season's four-team Atlantic League. The schedule will probably provide for a somewhat shorter season than usual, and the first series of games will be played on Sunday, December 18. The league adopted a constitution and a set of by-laws. The latter prescribe that each association shall deposit the sum of $100 with the secretary and treasurer as a guarantee of the payment of fines that may be assessed against it. Each association will also pay a membership fee of $6 a month for each calendar month of the playing season. Any person who is a bona fide employe, or former employe, of the Isthmian Canal Commission, the Panama Railroad Company, or any branch of the United States Government service, and who has resided on the Isthmus for a period of 42 days, or who can show by any statement of the head of the department in which he is employed that his employment is reasonably expected to continue for a period of six months, or any American citizen who is regularly employed by private business interests, is eligible as a player upon the consent of two-thirds of the associations comprising the league. This provision, however, does not apply to associations controlling teams in Panama or Colon, that are members of the league.

Professional players coming to the Isthmus to play temporarily are barred, and any club violating this prohibition shall be fined $25. No player shall be guaranteed a stated sum of money for ball playing. The gate receipts will be divided as in former years, 45 per cent to the park association, and 55 per cent equally divided between the contesting teams unless otherwise agreed upon between the managers, and the park association so notified. Each club shall submit to the secretary by December 1, 1910, a list of all players either held under contract or under the reserve clause of the joint agreement of the two former leagues. These lists will be bulletined, and all players carried in excess of 15, the number of men the manager of each club is entitled to carry, shall be declared released.

Releases will be legal only when signed by the president of the association. A player released by any club cannot play with another club until four playing days have elapsed, except when, in the opinion of the president of the league, such release is given for a legitimate purpose; in which case, with his approval and that of the presidents of the associations involved, the player may be signed at once.

When 50 per cent of the league games have been played, double headers become obligatory at the park where postponed games exist, at the next playing date between the clubs having postponed games, and shall continue until all postponed games have been played, but any teams having postponed games may play them at an earlier date by mutual agreement. No rain checks will be issued; in case of failure to play, the money will be refunded.

At the annual meeting of the Atlantic Athletic Association, which controls the Colon baseball park, the treasurer reported that last season's receipts were sufficient to make possible a ten per cent dividend on the stock. Dr. Dorand and F. K. Pilson have been elected to vacancies on the board of directors. The annual election of officers of the association was held on November 14 as follows: President, John Burke; vice-president, Hilary B. Parker; secretary, F. K. Pilson; treasurer, R. G. Castel.

Memorial Services of Kangaroos.

The annual memorial services of the I. O. P. K. will be held at the National Theatre in Panama on Sunday, December 4, at 3.15 p. m. For the accommodation of all Kangaroos, their families and friends, a special train will leave Colon at 12.30 p. m., which will stop at all regular stations and will leave Panama upon the return trip at about 6 p. m. No transportation will be required upon the train to Panama, but tickets for the return trip will be distributed at the theatre at the close of the services, and only those holding such tickets will be permitted to pass the gates at the depot. All members of the order are requested to dress in white, and to form at the depot and march in a body to the theatre. Music will be furnished by the U. S. Marine Band. The public is cordially invited to attend this service, and all Kangaroos are earnestly requested to be present.

The schedule of the special train will be as follows: Leave Colon, 12.30 p. m.; Gatun, 12.45; Tabernilla, 1.10; San Pablo, 1.15; Gorgona, 1.30; Matachin, 1.35; Bas Obispo, 1.40; Las Cascadas, 1.45; Empire, 1.50; Culebra, 1.55; Paraiso, 2.07; Pedro Miguel, 2.10; Corozal, 2.22; arrive at Panama, 2.30. The exact time of departure of the train on the return trip will be announced at the theatre.

Army and Navy Union of the U. S. A.

The commander of Garrison No. 106, A. N. U., having been invited by the Supreme Court of the I. O. P. Kangaroos to furnish colors and guard for the parade in Panama, on Sunday, December 4, 1910, members are requested to be present, in uniform, at the Panama railroad depot, Panama, at 2. 30 p. m. on that date.

Transportation by Kangaroo special leaving Colon at 12.30 p m.

A. G. Smith, *Adjutant.*

Empire C. Z., November 28, 1910.

Contract for Clearing Trails.

A contract has been awarded to Domingo Matos for clearing the Arraijan-Rio Grande, Arraijan-Paraiso, and Arraijan-Cochinito trails at a cost of $975. The nature of the work was described in The Canal Record of November 2.

SOCIAL LIFE OF THE ZONE.

Women's Clubs Miscellaneous Notes.

An election of officers was held in the Gorgona Woman's Club on Thursday, November 10, the following being chosen: President, Mrs. B. F. Henckle; vice-president, Mrs. C. McCann; secretary, Mrs. A. E. Calvit; treasurer, Mrs. J. Horn. A meeting will be held every Thursday at the clubhouse and a program for the remainder of the year will be issued early in December.

Five hundred copies of the cook book issued by the Federation of Women's Clubs, under the title of "The Panama Cookery Book" have been placed on sale at the Panama railroad commissaries. The book is bound in the Federation colors, green and gold, and has an attractive cover design. Upward of four hundred recipes have been collected by the club-women, among them a number of Panamanian dishes. The book is dedicated to Mrs. Lorin C. Collins, who perfected the organization of the Federation and placed it on its present working basis.

The Colon Humane Society will give a Christmas "treat" to the poor children of the city. It is proposed to collect the sum of $300 by popular subscription and to expend one-third of this for toys and the remainder for a dinner. An entertainment will be held in the public playground on Monday, December 5. The municipal band will play. The committee on arrangements is composed of the president of the society, Dr. C. C. Pierce, the Rev. E. G. Cooke and Efrain Tejada.

Wesleyan Methodist Missions.

The Rev. William J. Williams, general superintendent of the Wesleyan missions in the West Indies and Central America, made a visit to the missions in this district during the week beginning November 20. He made addresses at Colon on November 20, and at 11 o'clock on that morning, he opened the new church at New Frijoles, which has been erected through the joint efforts of the Bohio and Frijoles congregations. This church is under the joint pastorate of the Revs. M. B. King of Panama, and E. G. Cooke of Colon. At a meeting in Colon on November 21, the Hon. M. H. Thatcher presided, and addresses were made by him, the Rev. A. A. Nellis of Culebra, Mr. H. L. Stuntz of Colon, and the general superintendent.

The Rev. Mr. Williams, accompanied by the Rev. M. B. King, is now on a visit to Bocas del Toro, but will return to the Isthmus on December 1, and after another week's visit here will sail for his home in Kingston, Jamaica.

Church at Gatun for American Catholics.

An old French building has been moved to Gatun and there reerected as a church for the Roman Catholics in the American village. There are about 100 American Catholics in the American section who find it inconvenient to attend the church in the new village on rainy Sundays on account of the distance. The pastor of the church in New Gatun will officiate at the American church, saying mass once each Sunday.

The meeting place of the American Methodist Episcopal Zion Church, which was formerly on Eighteenth street, Panama, has been changed to the Santa Rosa road on the Canal Zone boundary. The Rev. J. Wilson Bell is pastor.

ORDINANCES.

Taxes on Vehicles for Public and Private Use.

The following ordinances enacted by the Isthmian Canal Commission at its 158th meeting on August 25, 1910, were approved by the Acting Secretary of War, October 31, 1910:

Ordinance.

Be it Enacted, by the Isthmian Canal Commission, that paragraph "*a*", section 7, of the "Regulations Providing for Certain Taxes and Licenses in the Canal Zone other than for the Sale of Intoxicating Liquors," effective July 1, 1908, is hereby amended to read as follows:

> For operating for hire a public coach or carriage, not operated by motor power, for the transportation of passengers, a license tax of $1.25 per month shall be charged; for a public cart, dray, or other public vehicle, not operated by motor power, the following license taxes shall be charged, namely: For each two-wheel vehicle, $2.50 per month; for each four-wheel vehicle, $5 per month. *Provided, however*, that in the construction and application of this section all vehicles which are used on the public roads of the Canal Zone for the transportation of merchandise, or other articles of value, by merchants and dealers, shall be held to be subject to license as provided in this section. *Provided, however*, that the license taxes in this section enumerated shall not apply to conveyances of the herein indicated character wherein passengers are transported for hire, which are duly licensed in the Republic of Panama.

Ordinance

Providing for the licensing and regulation of motor vehicles in the Canal Zone.

Be it Enacted, by the Isthmian Canal Commission, as follows:

Section 1. That, hereafter, there shall be collected and accounted for, as other similar taxes, the following license taxes from the owners or operators of motor vehicles used or employed on the streets or roads of the Canal Zone, namely: (*a*) For each motor vehicle (except motor cycles) used for the transportation of freight or passengers for hire, or for the transportation of merchandise or freight by any merchant or dealer, one hundred and fifty dollars ($150) per annum; (*b*) for each motor vehicle (except motor cycles) operated for pleasure, twenty-five dollars ($25) per annum; and (*c*) for each motor cycle ten dollars ($10) per annum.

Section 2. Before any person shall use or operate any motor vehicle on the public roads or streets of the Canal Zone, he shall procure from the Collector of Revenues of the Canal Zone Government a license authorizing him to use and operate such motor vehicle on said public roads or streets.

Section 3. Each motor vehicle operated on said roads or streets shall at all times, when so operated, carry thereon, at a conspicuous place at the rear thereof, a metal tag or card bearing thereon, in large numerals, the number of the license for such vehicle. It shall be the duty of the Collector of Revenues, when such license is issued, to furnish to the licensee said metal tag or card bearing said number, and the licensee shall, in addition to the license tax, pay to said collector a fee of one dollar ($1) for furnishing said tag or card, which fee shall be accounted for by said collector to the Zone Government in the same manner as are such license taxes. It shall be unlawful for any person to operate or use on said roads or streets any motor vehicle unless the same bears, at a conspicuous place at the rear thereof, such numeral tag or card.

Section 4. The Collector of Revenues shall keep a register, wherein he shall number, in consecutive order, all licenses granted by him under this ordinance, and the names of the licensees, and a brief description of the motor vehicle licensed. Such register shall be a public record. Said collector shall, immediately upon issuing any license herein provided for, give notice thereof, and furnish the information shown by the aforesaid register, to the Chief of Police, who shall cause arrests to be made for violations of this ordinance.

Section 5. Before the Collector of Revenues shall issue any license hereunder for the operation of any motor vehicle, he must be satisfied, from proof furnished, or from bis personal investigation that such motor vehicle for which license is desired can pass with ease and safety on any turn or part of any public road or street of the Canal Zone any other vehicle authorized by law to travel thereon. The said collector's refusal to issue any license indicated herein may, upon the formal request of the refused applicant, be reviewed by the Head of the Department of Civil Administration, whose decision shall be final.

Section 6. All motor vehicles shall, when being operated on any of the Canal Zone streets or roads, between the hours of 6 p. m. and 5 a. m., carry and prominently display lights, as follows: Automobiles, or motor vehicles of similar construction, two bright front or headlights, one on either side, and one red light at the rear; motor cycles, one bright headlight.

Section 7. Except as to the requirements for the use of lights, as provided in section 6 hereof, this ordinance will not apply to motor vehicles, which may be used on the public roads or streets of the Canal Zone under the authority of the Chairman of the Isthmian Canal Commission, or of the Secretary of War, for official purposes.

Section 8. The term "motor vehicle," as used herein, shall apply to and include every vehicle or conveyance which may be drawn or propelled by means of steam, gas, naptha, fluid, electricity, or other similar motor power.

Section 9. Any person violating any provision of this ordinance shall be deemed guilty of a misdemeanor, and shall, upon conviction in any district court of the Canal Zone, be punishable by a fine not to exceed fifty dollars ($50), or imprisonment not to exceed 30 days, or by both such fine and imprisonment in the discretion of the court.

Section 10. This ordinance shall be effective from the date of its approval by the Secretary of War.

Mechanical Draftsman Examination.

Applications will be received up to the close of business on December 15 for an examination for mechanical draftsman, Isthmian Canal Service. The entrance salaries for the positions which may be filled as a result of this examination are: Mechanical draftsman, first-class, $150 a month; second-class, $125; tracer, $100. The following are the subjects and their relative weights: (1) Mathematics and practical calculations, comprising arithmetic, algebra to and including problems involving quadratics, geometry, mensuration, logarithms and use of tables, elementary problems in mechanics, and use of slide rule and the interpretation of formulæ and correct working out of results in special cases, 25; (2) materials, comprising all the materials used in machine construction, 15; (3) drawing, involving a competent knowledge of machine construction and ability to draw neatly to scale, 25; (4) training and experience, 35.

Applicants must have had training and experience sufficient to entitle them to a rating of at least 70 in that subject, otherwise the remaining subjects of the examination will not be rated. Competitors attaining over 80 per cent in training and experience will be rated as first-class draftsmen; those who attain 80 per cent, or under, will be rated as second-class draftsmen. Eligibles in the first-class are eligible to second-class positions and to tracer positions, and may be given preference in making appointments thereto, provided they state in form 1312 their willingness to accept appointment to the lower position. To be rated as a first-class draftsman, not less than three years' good drafting room experience and, in addition, shopwork experience on machine construction is required. A technical school training in mechanical engineering will be accepted as equivalent to two years' practical work. To be rated as a second-class draftsman, not less than two years in drafting room, or one year in drafting and one year in the shop or on construction, is required. A technical school training in mechanical engineering will be accepted as equivalent to the two years' practice.

Competitors will be allowed to use a slide rule. A Carnegie, or similar handbook, is required for the work in the subject of drawing on the second day. Time allowed, two days of six and five hours, respectively. Men only, citizens of the United States, physically sound and in good health, and between the ages of 20 and 45 years, will be admitted to the examination. Each applicant should submit on the day of the examination a photograph of himself, unmounted preferred, taken within two years. Form 1312 should be requested from the undersigned, and should be filed, with medical certificate executed, not later than the close of business December 15.

JOHN K. BAXTER,
Secretary, Isthmian Civil Service Board.

Culebra, C. Z., November 25, 1910.

Money Order Business.

The money order business in the Canal Zone post-offices during the month of October, as compared with that of October 1909 and 1908, was as follows:

	1910	1909	1908
Orders issued...	16,784	16,608	14,472
Value.....	$429,211.70	$431,421.47	$441,783.30
Payable in U. S....	320,697.13	323,721.09	321,095.19
Payable in C. Z.....	108,152.69	107,386.88	120,688.11
Payable in Mart'que	361.88	313.50	....

Sand Shipped from Balboa.

A report of the sand loaded and shipped from Balboa during October follows:

DESTINATION.	Number of Cars.	Cubic Yards.
Pacific Division..................	2,696	40,440
Central Division................	27	405
Atlantic Division...............	3	75
Quartermaster's Department......	4	115
Sanitary Department............	1	25
Panama railroad................	4	100
Miscellaneous..................	5	100
Total........................	2,740	41,260

This sand is dredged from Chamé Bay, 23 miles west of the Pacific entrance to the Canal.

Gatun Dam Spillway.

The amount of concrete and large rock laid in the Spillway of Gatun Dam during the week ending November 26, is shown in the following statement:

DATE.	CUBIC YARDS.		
	Concrete	Large rock.	Total.
November 21...........	214	18	232
November 22...........	190	14	204
November 23...........	210	10	220
November 24—Holiday			
November 25...........	192	....	192
November 26...........	208	6	214
Total.................	1,014	48	1,062
Previously reported...	....	....	106,528
Grand total...........	....	....	107,590

The daily average number of 2-yard mixers used was 1 1-5; the daily average of hours worked, 6½, and the average amount of concrete mixed each day, 203 cubic yards.

CLASSIFIED EXPENDITURES.

A statement of classified expenditures to September 30, 1910, follows:

	Department of Civil Administration.	Department of Sanitation.	Department of Construction and Engineering.	General Items.	Total.
Total to June 30, 1910..	$3,427,090.29	$9,673,539.28	$69,622,561.42	$78,022,606.10	$160,745,797.09
Total, fiscal year 1910..	709,351.37	1,803,040.95	26,300,167.05	2,863,088.83	31,675,648.20
July, 1910.............	58,474.88	156,006.64	2,216,849.78	280,015.85	2,711,347.15
August, 1910...........	63,887.05	164,220.65	2,348,777.07	336,961.35	2,913,846.12
September, 1910.......	60,586.46	153,433.27	2,516,814.41	236,170.76	2,967,004.90
Total...............	$4,319,390.05	$11,950,240.79	$103,005,169.73	$81,738,842.89	$201,013,643.46

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

The following is the standing in the billiard tournament which closed last week:

NAME.	Handicap.	Won.	Lost.
Conlan	100	8	0
French	60	6	2
Case	60	5	3
Dubols	100	4	4
McCann	70	4	4
Silver	80	4	4
Thomson	90	3	5
Kaufman	60	2	6
Koperski	60	0	8

McCann made best average, 1.4. Thomson made best single average, 1.8. Dubois made the best run, 26.

Cristobal played Culebra in basketball on Saturday November 26, and won by the score of 27 to 19.

The following are the men who rolled over 100 in duckpins during the week ending November 26: Kersey, 114, 100, 100; Dakin, 108; Hill, 104.

The duckpin tournament will begin on December 1. No entry fees will be accepted after the first ball has been rolled.

The following is the standing in the bowling tournament:

NAME.	Handicap.	Won.	Lost.
Cohen	Scratch	4	0
Herrington	17	1	3
Huttlemeier	22	6	2
Cornthwaite	24	2	2
Fleischman	25	1	2
Hayes, G. C	27	2	3
Hurst	30	1	2
Warner	31	0	1
Sickler	40	0	1
Koperski	55	0	1

The following are the scores of the men who rolled in the Thanksgiving tournament:

NAME.				Total.
Cohen	210	123	173	506
Herrington	155	150	150	455
Case	163	166	138	467
Cushing	181	203	166	550
Dougherty	149	168	133	450
Huttlemeier	166	149	144	459
Everett	123	197	142	462

Cushing rolled his tie game with Brown of Empire, as follows: 180, 159, 152; total, 491.

Scores in doubles were as follows:

NAME.				Total.
Cohen	214	130	167	1062
Dougherty	181	201	169	
Case	225	202	157	1113
Cushing	186	169	174	
Herrington	166	146	171	997
Huttlemeier	172	164	178	

EMPIRE.

Empire won two out of three games from the Culebra bowling team last Saturday evening by the following scores:

Empire.				Culebra.			
Gustavson	184	151	143	Cohen	136	138	186
Potter	210	196	168	Herrington	130	158	143
Bardelson	229	188	160	Fleischman	123	141	119
Pearson	184	202	128	Case	184	169	182
Huson	157	226	186	Dougherty	212	180	169
Total	964	963	785	Total	785	786	799

Gorgona defeated Empire in a game of basketball last Saturday evening by the score of 37 to 31.

The folowing program was given at the smoker on Friday evening, November 18: Violin solo, Mr. Gilman of Culebra; slack wire exhibition, Mr. Chatfield of Gatun; sketch by King and Cullen; cartoons by Mr. Stolberg; sketch by Young and Evans. The numbers were interspersed by informal songs, by the glee club and audience.

At the Thanksgiving entertainment three sets of moving pictures were shown, followed by the sketch, "In a Chinese Laundry." Refreshments were served after the entertainment. During the day the bowling tournament, in which all the clubhouses were interested, was held. Brown of Empire, and Cushing of Culebra tied for singles with a score of 550. In the play-off, Brown won by a score of 556. Potter and Huson won the doubles with a score of 1,118, and Edwards took second place in the singles by a score of 547. There were 29 entries.

GORGONA.

Two Spanish classes have been organized—the beginners' class to meet every Monday and Thursday evenings from 7.15 to 8.30, and the advanced class Tuesday and Friday evenings at the same hour. A class for men and women, which will meet every Saturday night, will be organized if enough express a wish to join. The price of the lessons is 25 cents each, payable $2 in advance. Señor Emiliano Cubillos will be the instructor.

The Rev. A. A. Nellis delivered a Thanksgiving sermon at the monthly song service held at the clubhouse on Sunday evening, November 27. A vocal solo was given by Wm. Booz.

Geo. Cook, foreman of the air brake department of the Gorgona shops, will organize a class in air brake instruction in the near future. All who are interested in this work will please leave names at the office.

On Saturday night, November 26, a meeting was held to formulate plans for the festival to be held on Christmas eve, December 24, for the people of Gorgona. Various committees were appointed to make the necessary arrangements.

GATUN.

The membership committee met recently and elected Chas. E. Wood chairman, W. C. Gayer vice-chairman, and W. E. Wittrig, secretary. The committee is planning a progressive campaign for new members. Meetings will be held every Monday night.

Gatun defeated Gorgona at basketball Saturday evening, November 19; score, 35 to 32.

The standing in the duckpin tournament is as follows:

	Played.	Won.	Lost.
DeMoll	6	6	0
Bull	3	2	1
Duryea	7	4	3
Myers	8	4	4
Harrington, C. R	4	1	3
Timer	3	0	3
Hodges	2	0	2
King	1	0	1

Gatun lost to Empire in the bowling match Saturday night, November 19. The score was as follows: Gatun, 820,785,741; Empire, 819, 873, 846.

The following 200 scores were rolled last week: Durand, 202, 210, 201, 208, 210; Hodges, 200, 206, 203; Myers, 201; O'Meara, 222; Severn, 215; Wolf, 201.

Miss Bogner will teach the elementary class in Spanish, which meets every Tuesday night, and Miss Frost will have charge of the advanced class which meets on Friday nights.

The Gatun Y. M. C. A. pressing club has adopted the following prices: Two suits within 30 days, $1; four suits within 30 days, $1.50.

The Rev. A. A. Nellis of Culebra led the discussion club on Thursday evening, November 14; subject, "Ambition." Mr. Smith led the discussion on Friday evening, November 25.

The following men are representing Gatun's bowlers in the final series: Durand, Barte, Wolf, Hodges, Harrington, and DeMoll.

The gymnasium class, so far, has an average attendance of 16 men. Piano music for the class in calisthenics is a feature of the work.

The Christmas celebration committee has elected C. C. Carr, chairman. Subcommittees on subscriptions, presents, and program have been appointed.

Pennants of the various clubhouses on the Isthmus may be secured at the Gatun clubhouse.

Open house was observed on Thanksgiving Day. The clubhouse was decorated with palms. In the evening an entertainment was given; Mrs. Ludwig sang; Mrs. Nat Johnson gave a piano selection, and Russell E. Chatfield gave a slack wire performance. The program closed with moving pictures.

"The Passion Play" in moving pictures was given at the Sunday night service on November 27. A male quartet sang sacred songs.

CRISTOBAL.

Thanksgiving Day was observed at Cristobal by the bowling championship games in the morning and afternoon, and by an informal public social in the evening. Cleary made high score for the day on the local alleys with 226. The following scores for the singles were made for the three games: Burns, 514; Bullard, 510; Rabbitt, 494. The following scores were made in the doubles for three games: Burns and Cleary, 1,039; Weston and Barrett, 1,027; Blackburn and Henry, 987. Seventeen men were entered from here in the singles, and eight teams in the doubles, making 33 in all.

Cristobal won two out of three games from Gorgona last Saturday night by the following scores:

Gorgona.				Cristobal.			
Roper	191	170	198	Bullard	168	161	157
Otis	168	158	142	Barrett	213	205	167
White	138	166	177	Collins	170	219	183
Bordt	157	137	141	Burns	137		
Varenkamp	175	196	211	Louch	178	172	165
				Weston		166	167
Total	829	827	869	Total	866	923	839

Saturday, the boys of Gatun Y. M. C. A. played the boys of the Cristobal Y. M. C. A. in basketball and indoor baseball. Gatun won the basketball game, and Cristobal the indoor baseball game.

At the Thanksgiving social the following program was given: Readings, Mr. Kearns; soprano solo, Mrs. Green; baritone solo, Mr. Jamieson; a play, "A Box of Monkeys," Mrs. Pierce, Mrs. Perkins, Miss Frost, Dr. Pierce, and Mr. Sexton.

PORTO BELLO.

On November 19 an "old fashioned social" was held. The evening was spent playing games. Mr. MacDougal danced the "Highland Fling", and gave two readings, and Mrs. Pflueger played several selections on the piano. The ladies furnished home made cakes, and ice cream, apples and cigars were also served.

The discussion club on Friday night, November 25, was led by Wm. H. Greer; subject, "Heredity."

Red Cross Finances.

A statement of the financial condition of the Canal Zone Chapter of the American National Red Cross for the month of October, 1910, follows:

RECEIPTS.

October 1.	Balance on hand	$1,922.57	
October 4.	Membership dues	2.00	
October 7.	Interest on money in bank, July, August, and September	9.68	
			$1,934.25

DISBURSEMENTS.

October 3.	Draft to secretary, American National Red Cross for one-half annual dues paid during quarter ending July 31.	$39.00	
October 7.	Cab hire	.20	
			$39.20
October 31.	Balance on hand		$1,895.05

C. A. DEVOL,
Chairman and Acting Treasurer.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Gorgona, C. Z., on Sunday, December 4, 1910, at 6 p. m. The program follows:

1 March—*Monstrat Viam*.....Joy
2 Selection—*The Chocolate Soldier*.....Straus
3 *Procrastination Rag*.....Cobb
4 Overture—*Raymond*.....Thomas
5 Waltz—*Tres Jolie*.....Waldteufel
6 Medley Selection—*Popular Hits*.....Alford
7 Intermezzo—*Silver Bell*.....Wenrich
8 Humoresque—*What's the Matter with Father?*.....Lampe
9 March—*Any Little Girl That's a Nice Little Girl*.....Fischer

CHAS. E. JENNINGS, *Musical Director.*

The next concert will be given at Hotel Tivoli on Sunday, December 11, at 7.30 p. m.

Misdirected Letters.

Ancon, C. Z., November 30, 1910.

The following insufficiently addressed letters originating in the United States and its possessions have been received in the office of the Director of Posts, and may be secured upon request of the addressee:

LETTERS UNCALLED FOR NOVEMBER 23.

Barbee, Robert A. (2)
Berglund, Nils
Blilch, Ivy
Brogan, James H.
Brooke, G.
Brooks, Mrs. B. A.
Bitler, Ernest
Cameron, Mrs. J. M.
Cartier, He[illegible]ry F.
Christia[illegible] [illegible]obert
Cook, Os[illegible]
Cooper, E. J.
Corinaldi, E. E.
Clarke, John W.
Dickinson, Thomas
Fahr, Augustus
Fink, C. W.
Gilliam, Mace H.
Greame, Mrs. Andrew
Gwartney, D. C.
Harris, Joseph
Higley, Homer J.
Hill, Iver Gilbert
Hoose, James H.
Johnson, Thomas E.
Kaufmann, R. H.
Kennedy, E. J.
Lake, Benjamin
Leahy, James
McDonald, Matthew
Meyers, Ed.
Murphy, Geo. O. (2)
Myrie, Mrs. Caroline
Perry, B. F.
Robertson, R. R.
Roderick, Thos. C.
Schifler, Leonard
Schneider, J. M.
Shockelford, James
Sisson, Mrs. B. F.
Stephenson, Alonzo
Strobl, Michael
Thompson, W. L.
Trenary, L. G.
Vampcamp, Mrs.
Van Dine, P. B.
Vincent, Miss Claude
Warner, B. L.
Watson, Frederick
Wood, Prof. Ewing
Wynter, Algemal

LETTERS UNCALLED FOR NOVEMBER 30

Anderson, Mrs. H. T.
Batalla, J. G.
Burns, James
Cline, R. L. (pkg.)
Demuth, Mrs. E. J.
Donner, F. L.
Greeman, Ethel
Hurley, Walter
Knowlton, H.H.
Mailliord, John
McKay, Hugh
McNamara, John
Moeller, Leonard
Reese, Gorgoria
Robertson, L.
Roper, C. T.
Rowe, H. (pkg.)
Spell, Henry
Stevenson, Mrs. Hollman
Test, Henry J.
Taylor, Mrs. William
Whitmark, Nelson
Wilkie, Samuel G.

Proposals for Excavation, Obispo Diversion.

Sealed proposals for excavation of about 21,942 cubic yards of earth, located between stations 1602 and 1612 on the east bank of the Canal, will be received until 2 p. m., December 15, 1910, and then opened. Full information will be furnished by the division engineer, Empire. Envelopes containing proposals must be endorsed "Proposals for Excavation, Obispo Diversion," and addressed C. A. DEVOL, *Chief Quartermaster.*

The American Society of Civil Engineers contemplates taking a trip to the Canal Zone in March.

OFFICIAL CIRCULARS.

Accounts with Republic of Panama.

CULEBRA, C. Z., October 28, 1910.

CIRCULAR No. 240-A. (Superseding CIRCULAR No. 240):

Charges and credits against the Republic of Panama on account of the installation, construction, maintenance, operation, and repairs of the water and sewer systems, and pavements of the cities of Panama and Colon shall be distributed, kept, and stated, by the Examiner of Accounts, separately for each city, in accordance with contracts dated September 30, 1910, as follows:

SUMMARY OF ACCOUNTS.

A Water and Sewer Systems.
  1 Capital Cost.
  2 Operation and Maintenance.
B Reservoirs, Pipe Lines, and Filtration Plants.
  1 Interest on Capital Cost.
  2 Maintenance and Operation.
C Pavements.
  1 Capital Cost.
  2 Repairs and Maintenance.

DEFINITION OF ACCOUNTS.

A Water and Sewer Systems.

1 Capital Cost.

This account will be charged with the entire cost of the installation of water and sewer systems within the city up to June 30, 1910, and quarterly thereafter with all expenditures on account of new construction work and with replacements costing one thousand dollars or more for a job, together with one-half per cent per quarter interest on debit balances.

This account will be credited quarterly proportionately with account C-1 with the balance of amounts collected, after proper credits to accounts A-2, B-1, B-2, and C-2, whether such balance be more or less than the quarterly capital installments with interest, as provided in the contracts.

2 Operation and Maintenance.

This account will be charged quarterly with all expenditures during the quarter on account of operation and maintenance of the water and sewer systems. This account will be credited quarterly with an amount equal to the total expenses.

B Reservoirs, Pipe Lines, and Filtration Plants.

1 Interest on Capital Cost.

This account will be charged quarterly with such proportion of the quarterly interest at one-half per cent on the entire cost of reservoirs, pipe lines, and filtration plants, as the amount of water consumed in the city during the quarter bears to the total consumption from the reservoir, or total amount of water filtered.

This account will be credited with collections for water rentals quarterly by an amount equal to the interest charge.

2 Maintenance and Operation.

This account will be charged quarterly with such proportion of the expenditures during the quarter, for the operation and maintenance of the reservoirs, pipe lines, and filtration plants, as the amount of water consumed in the city during the quarter bears to the total consumption from the reservoir, or to the total amount of water filtered.

This account will be credited quarterly with an amount equal to the total charges.

C Paving.

1 Capitol Cost.

This account will be charged with the entire cost of paving up to June 30, 1910, and quarterly thereafter with all expenditures during the quarter for new construction work and with replacements costing one thousand dollars, or more, for a job, together with one-half per cent per quarter interest on debit balances.

This account will be credited quarterly proportionately with account A-1 with the balance of amounts collected, after proper credits to accounts A-2, B-1, B-2, and C-2, whether such balance be more or less than the quarterly installments with interest, as provided in the contracts.

2 Maintenance and Repairs.

This account will be charged quarterly with all expenditures during the quarter on account of maintenance and repairs of pavements.

This account will be credited with collections from water rentals with an amount equal to the total charges.

The collections made on account of water rentals will be credited in the following order:

First—To account A-2, Maintenance and Operation.
B-1, Interest on Capital Cost.
B-2, Maintenance and Operation.
C-2, Repairs and Maintenance.

Amounts equal to the total expenditures.

Second—To account A-1, Capital Cost.
C-1, Capital Cost.

Amounts equal to their proportion of balance of collections remaining after credits to accounts A-2, B-1, B-2, and C-2.

The contracts between the United States of America and the Republic of Panama, dated September 30, 1910, contemplate a quarterly statement of the accounts on water works, sewers, and pavements; that operating expenses, interest and one-fourth of the year's capital cost shall be settled from collections, and a new capital cost determined each quarter, beginning July 1, October 1, January 1, and April 1 of each year.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Acting Division Engineer, Atlantic Division.

CULEBRA, C. Z., November 23, 1910.

CIRCULAR No. 361:

Effective November 24, 1910, and during the absence on leave of Lieutenant-Colonel Wm. L. Sibert, Major Chester Harding will be in charge of the Atlantic Division as Acting Division Engineer.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Board of Local Inspectors.

CULEBRA, C. Z., November 25, 1910.

MR. C. C. SNEDEKER,
Dry Dock, Cristobal, C. Z.

Sir: Under authority conferred upon me by Executive Order of the President, No. 1131, dated October 2, 1909, you are hereby appointed a member of the Local Board of Inspectors to serve during the absence on leave of Mr. C. J. Anderson.

Respectfully,
GEO. W. GOETHALS, *Chairman.*

Acting Resident Engineer, Pacific Division.

COROZAL, C. Z., November 28, 1910.

ORDER:

During the absence on leave of Mr. W. B. Corse, Resident Engineer, Mr. Frank Cotton will be in charge of the first district of the Pacific Division as Acting Resident Engineer, effective November 29, 1910.

S. B. WILLIAMSON, *Division Engineer.*

October Rainfall for Three Years.

STATION.	1908	1909	1910	Station Average	Years of Record	Rai'y days 1910
Pacific Section–	*Ins.*	*Ins.*	*Ins.*	*Ins.*		
Ancon	8.79	8.77	8.86	10.43	14	22
Balboa	7.51	11.20	9.98	9.12	12	21
Miraflores	8.85	17.53	13.40	13.26	3	25
Pedro Miguel	8.41	17.47	13.42	13.10	3	23
Rio Grande	8.59	18.52	14.72	13.11	6	24
Central Section–						
Culebra	9.03	17.70	13.51	11.35	22	25
Camacho	6.81	20.63	17.20	13.71	5	27
Empire	8.87	21.14	12.57	14.16	6	27
Gamboa	8.90	16.98	12.90	12.77	28	27
Alhajuela	15.09	19.32	15.37	13.53	12	24
El Vigia	13.80	20.93	16.90	17.21	3	26
Gorgona	......	18.90	13.33	13.10	7	24
San Pablo	12.95	15.81	16.88	16.14	4	25
Tabernilla	14.57	17.02	14.72	18.19	4	26
Bohio	14.25	16.34	14.53	16.80	17	26
Trinidad	12.59	14.58	16.30	14.49	3	24
Monte Lirio	13.53	13.38	16.46	14.46	3	31
Atlantic Section–						
Gatun	12.22	15.55	16.02	16.91	6	21
Brazos Brook	11.95	14.82	12.22	14.76	5	25
Cristobal	10.96	19.31	15.65	14.15	41	22
Porto Bello	7.28	8.70	9.54	8.51	3	19
Nombre de D	......	18.17	5.51	11.89	2	15

Proposals for Purchase of Charcoal.

Sealed bids will be received at the office of the Depot Quartermaster, Mount Hope, until 2 p. m., December 6, 1910, when they will be publicly opened, for 25,000 pounds of charcoal, to be made from mangle wood, or guayacan, or equal, and to be first-class in every respect, subject to inspection. Delivery must be made in lots of 12,500 pounds each, first lot to be delivered within 20 days after award is made; second lot within 90 days after date of award. Delivery will be accepted on board cars at any point on the Panama railroad, and charcoal will be weighed on receipt at Mount Hope depot. Material must be delivered in bags, of which an equal number will be returned to the contractor. The right is reserved to reject any or all bids. Bids must be marked "Proposal for Furnishing Charcoal," and addressed to C. Nixon, Purchasing Agent on the Isthmus, Mount Hope.

Family Quarters.

Applications for married quarters were on file on November 1, as follows:

PLACE.	No. 1 List.	No. 2 List.
Ancon	6 (4)	18
Ancon Hospital		3
Balboa		37 (9)
Corozal	2	36
Cristobal		133
Culebra	1	1
Empire	0	26
Gatun	4	152 (63)
Gorgona	23	108 (34)
Las Cascadas-Bas Obispo	23	12 (4)
Miraflores		2
Pedro Miguel-Paraiso	8	44 (10)
Porto Bello	2	22
Tabernilla	1	0
Toro Point		
Total	70 (4)	594 (120)

The figures in parentheses show the number of applicants already occupying regular or nonhousekeeping family quarters at stations, other than those at which applications are filed.

Rainfall from October 1 to 31, Inclusive.

MIDNIGHT TO MIDNIGHT.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	1.98	10	8.86
Balboa	1.77	10	9.98
Miraflores	2.06	22	13.40
Pedro Miguel	1.85	22	13.42
Rio Grande	2.93	18	14.72
Central Section—			
Culebra	2.88	18	13.51
Camacho	3.10	18	17.20
Empire	1.99	18	12.57
Gamboa	2.19	10	12.90
Alhajuela	2.72	20	15.37
El Vigia	2.65	21	16.90
Gorgona	2.30	10	13.33
San Pablo	2.79	19	16.88
Tabernilla	2.56	20	14.72
Bohio	2.92	20	14.53
Trinidad	2.45	15	16.30
Monte Lirio	5.39	20	16.46
Atlantic Section—			
Gatun	3.60	31	16.02
Brazos Brook	3.36	20	12.22
Cristobal	3.85	19	15.65
Porto Bello	1.26	30	9.54
Nombre de Dios	1.51	31	5.61
Bocas del Toro	.74	25	3.16

Rainfall from November 1 to 26, Inclusive.

Pacific Section—	*Ins.*		*Ins.*
Ancon	.80	25	3.44
Balboa	.92	25	3.36
Miraflores	1.91	21	8.84
Pedro Miguel	1.94	11	8.78
Rio Grande	3.25	11	9.64
Central Section—			
Culebra	1.62	11	8.43
Camacho	1.96	12	11.35
Empire	1.44	11	6.63
Gamboa	3.02	11	12.43
Alhajuela	1.48	16	11.47
El Vigia	1.60	21	12.15
Gorgona	1.48	6	9.31
San Pablo	2.98	11	10.42
Tabernilla	2.79	11	10.74
Bohio	3.17	20	19.92
Monte Lirio	2.50	4	21.91
Atlantic Section—			
Gatun	3.69	7	21.14
Brazos Brook	4.02	1	23.18
Cristobal	2.85	11	23.59
Porto Bello (To 5 p. m., Nov. 25)	3.89	4	18.77
Nombre de Dios	4.58	4	11.71

WEATHER CONDITIONS, CANAL ZONE, OCTOBER, 1910.

STATIONS.	Press're (redue'd to mean of 24 hours.)	Temperature.					Mean relative humidity.	Precipitation.			Wind.				
		Mean.	Maximum.	Date.	Minimum.	Date.		Total inches.	Station average.	Number of rainy days.	Total movement (in miles.)	Prevailing direction.	Max. velocity (in miles.)	Direction.	Date.
Cristobal	29.856	78.5	89	1	70	25	90	15.65	14.15	22	4,910	S.E.	36	S.W.	5
Culebra	29.858	78.0	89	2	69	1	93	13.51	11.35	25	3.954	S.E.	33	N.E.	27
Ancon	29.852	78.5	90	30	70	30	91	8.86	10.43	22	5.362	S.	26	S.	17

COMMISSARY DEPARTMENT.

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning November 21.

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	7
Shoulder, neck trimmed off, (4 lbs. and over), per pound	10
Entire forequarter (not trimmed) 10 pounds and over, per pound	9
Leg, (8 to 10 pounds), per pound	19
Cutlets, per pound	20
Short cut chops, per pound	22
Lamb—Stewing, per pound	7
Entire forequarter, neck trimmed off, per pound	10
Leg (5 to 8 pounds), per pound	24
Chops, per pound	26
Cutlets, per pound	26
Veal—Stewing per pound	10
Shoulder for roasting (not under 4 pounds), per pound	15
Loin for roasting, per pound	19
Chops, per pound	22
Cutlets, per pound	26
Pork cuts, per pound	22
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	9
Corned, per pound	12, 14, 16
Chuck roast, (3 pounds and over), per pound	13
Pot roast, per pound	15
Rib roast, second cut (not under 3½ pounds), per pound	18
Rib roast, first cut (not under 3 pounds), per pound	20
Sirloin roast, per pound	21
Rump roast, per pound	21
Porterhouse roast, per pound	21
Steak, Chuck, per pound	14
Round, per pound	15
Rib, per pound	20
Sirloin, per pound	21
Porterhouse, per pound	21
Rump, per pound	21
Tenderloin, per pound	24

MISCELLANEOUS.

Livers—Beef, per pound	10
Calf, each	60
Half, each	30
Sausage—Pork, per pound	17
Bologna, per pound	14
Frankfurter, per pound	14
Leberwurst, per pound	14
Sweet bread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	†37
½ dozen only	†23
Bluefish, fresh, per pound	16
Cod, fresh, per pound	10
Halibut, fresh, per pound	15
Oysters, in 1-qt. kegs, keg	50

POULTRY AND GAME.

Chickens—Fancy roasting, large, each	1.50
medium, each	1.30
Fowls, each	70, 82, 93, 1.04, 1 15
Ducks, large, each	1 50
medium, each	1 30
Broilers, each	75
Turkeys, per pound	30
Squabs, each	35
Capons, each	†2.60
Geese, fatted, each	†2.75
Pheasants, each	70, 1.00
Partridges, each	50
Grouse, each	85

CURED AND PICKLED MEATS.

Ham—English York Cut, per pound	30
German, Westphalia, per pound	36
Sugar cured, per pound	22
Sliced, per pound	25
Half, for boiling, per pound	23
Boiled, per pound	28
Hocks, per pound	‡08
Bacon—Breakfast, whole piece, per pound	*27
Breakfast, sliced, per pound	*28
Beef, salt, family, per pound	10½
Pork, salt, family, per pound	15
Ox tongues, each	80
Pigs' feet, per pound	10
Tongues, per pound	16
Mutton, mess, per pound	7

DAIRY PRODUCTS.

	Price.
Butter—Creamery special, per pound	40
Cheese—Roquefort, per pound	38
Philadelphia Cream, cake	10
Young America, per pound	22
Swiss, per pound	26
Edam, each	1.00
Camembert, in large tins, tin	38
Camembert, in small tins, tin	14
Neufchatel, each	6
Gouda, per pound	34
Parmesan, per pound	35
Milk, Briarcliff, bottle	**25
Buttermilk, bottle	**15
Fer-mil-lac, bottle	10
Ice cream, quart	‡25
Ice cream, ½-gallon	‡50

VEGETABLES AND FRUITS.

Beets, per pound	3
Celery, per head	6
Carrots, per pound	3½
Cabbage, per pound	3
Cucumbers, per pound	5
Cauliflower, per pound	10
Lettuce, per head	5, 7, 10
Onions, per pound	3
Potatoes, white, per pound	3½
Sweet, per pound	2½
Squash, per pound	4
Turnips, per pound	3
Yams, per pound	3½
Apples, per pound	5
Grapefruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12

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*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on list list.

‡Sold only from commissaries; no orders taken for delivery.

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal and Colon during the week ending November 26, 1910:

Ancon, November 20, from New York, with 25,500 barrels cement for Atlantic Division; 102,000 bags cement for Pacific Division.

Storfund, November 21, from New York, with 14,970 barrels cement for Atlantic Division; 59,937 bags cement for Pacific Division.

Sibiria, November 21, from New York, with 200 barrels carbolic acid, 7 bundles copper wire for stock.

Panama, November 22, from New York, with 10 cases electrical goods, 23 reels wire rope, 20 bundles wire rope for Atlantic Division; 6 reels wire rope for Central Division; 1 oxy-acetylene cutting and welding plant, complete, 30 cases castings, 700 bundles bolts for Mechanical Division; 54 cases drugs and sundries for Sanitary Department; 387 bars iron, 269 bundles iron, 80 cases concentrated lye, 226 kegs bolts and rivets, 11 cases lubricating oil, 11 cases valves, 20 drums compound, 114 cases gages for stock; and a miscellaneous cargo, the whole consisting of 2,164 packages, weighing 243 tons.

Abangarez, November 24, from New Orleans, with 88,138 feet yellow pine lumber for Atlantic Division; 42,523 feet yellow pine lumber for Central Division; 26,750 feet white oak lumber for Pacific Division; 12,610 feet white oak lumber, 800 pieces steel knuckles for Mechanical Division; 85,946 feet white oak lumber, 50 crates refrigerators, 176 bales straw, 1,944 bales hay, 92 crates beds and springs for stock.

Almirante, November 24, from New York, with 8,735 pieces steel bars for Atlantic Division; 105 tons lock construction material for Pacific Division; 83 drums car oil, 400 pails grease, 16 bundles hoes, 600 drums calcium carbide for stock.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, November 26. All heights are in feet above mean sea level:

DAY AND DATE	STATION.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun. Nov. 20	133.0	97.5	51.9	18.2	17.4
Mon. Nov. 21	133.4	98.0	52.1	19.2	17.8
Tues. Nov. 22	129.4	95.4	52.0	19.8	18.6
Wed. Nov. 23	128.6	95.0	49.1	19.6	18.7
Thurs. Nov. 24	128.1	94.8	48.3	19.1	18.5
Friday, Nov. 25	132.9	97.8	51.9	19.5	18.2
Sat. Nov. 26	130.9	96.4	51.1	19.5	18.4
Height of low water	125.0	92.0	46.0		

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending December 7, 1910 (75th meridian time):

DATE.	Low.	High.	Low.	High.	Low.
	A. M.	A. M.	A. M.	P. M.	9.55
December 1	......	3.24	9.40	3.57	10.30
December 2	......	3.57	10.15	4.27	11.04
December 3	......	4.28	10.50	4.57	11.38
December 4	......	5.00	11.25	5.28	......
			P. M.		
December 5	......	5.32	12.02	6.03	......
December 6	12.15	6.08	12.38	6.40	......
December 7	12.56	6.47	1.20	7.22	......

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Colon	P. R. R.	Monday	Nov. 28
Advance	P. R. R.	Saturday	Dec. 3
Panama	P. R. R.	Saturday	Dec. 10
Allianca	P. R. R.	Friday	Dec. 16
Colon	P. R. R.	Thursday	Dec. 22
Advance	P. R. R.	Thursday	Dec. 29
Panama	P. R. R.	Wednesday	Jan. 4
Allianca	P. R. R.	Tuesday	Jan. 10

CRISTOBAL TO NEW YORK.

Allianca	P. R. R.	Sunday	Dec. 4
Colon	P. R. R.	Saturday	Dec. 10
Advance	P. R. R.	Friday	Dec. 16
Panama	P. R. R.	Thursday	Dec. 22
Allianca	P. R. R.	Wednesday	Dec. 28
Colon	P. R. R.	Tuesday	Jan. 3
Advance	P. R. R.	Tuesday	Jan. 10
Panama	P. R. R.	Monday	Jan. 16

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 4th and 25th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Santa Marta	U. F. C.	Thursday	Nov. 24
Clyde	R.-M	Saturday	Nov. 26
Sarnia	H.-A.	Saturday	Nov. 26
Metapan	U. F. C.	Thursday	Dec. 1
Prinz Joachim	H.-A.	Saturday	Dec. 3
Zacapa	U. F. C.	Thursday	Dec. 8
Thames	R.-M	Saturday	Dec. 10
Sibiria	H.-A.	Saturday	Dec. 10
Almirante	U. F. C.	Thursday	Dec. 15
Santa Marta	U. F. C.	Thursday	Dec. 22
Tagus	R.-M	Saturday	Dec. 24
Metapan	U. F. C.	Thursday	Dec. 29
Zacapa	U. F. C.	Thursday	Jan. 5
Oruha	R.-M	Saturday	Jan. 7

COLON TO NEW YORK.

Almirante	U. F. C.	Thursday	Dec. 1
Prinz Aug. Wilhelm	H.-A.	Tuesday	Dec. 6
Santa Marta	U. F. C.	Thursday	Dec. 8
Tagus	R.-M	Monday	Dec. 12
Sarnia	H.-A.	Tuesday	Dec. 13
Metapan	U. F. C.	Thursday	Dec. 15
Prinz Joachim	H.-A.	Tuesday	Dec. 20
Zacapa	U. F. C.	Thursday	Dec. 22
Oruba	R.-M	Monday	Dec. 26
Almirante	U. F. C.	Saturday	Dec. 29
Santa Marta	U. F. C.	Thursday	Jan. 5
Magdalena	R.-M	Monday	Jan. 9

NEW ORLEANS TO COLON.

Atenas	U. F C.	Saturday	Nov. 26
Heredia	U. F. C.	Wednesday	Nov. 30
Turrialba	U. F. C.	Saturday	Dec. 3
Cartago	U. F. C.	Wednesday	Dec. 7
Abangarez	U. F. C.	Saturday	Dec. 10
Parismina	U. F. C.	Wednesday	Dec. 14
Atenas	U. F. C.	Saturday	Dec. 17
Turrialba	U. F. C.	Saturday	Dec. 24

COLON TO NEW ORLEANS.

Abangarez	U. F. C.	Thursday	Dec. 1
Parismina	U. F. C.	Thursday	Dec. 1
Atenas	U. F. C.	Thursday	Dec. 8
Heredia	U. F. C.	Thursday	Dec. 8
Turrialba	U. F. C.	Thursday	Dec. 15
Cartago	U. F. C.	Thursday	Dec. 15
Abangarez	U. F. C.	Thursday	Dec. 22
Atenas	U. F. C.	Thursday	Dec. 29

COLON TO BARBAOOS, CALLING AT TRINIDAD.

Clyde	R.-M	Tuesday	Dec. 6
Thames	R.-M	Tuesday	Dec. 20
Tagus	R.-M	Tuesday	Jan. 3

The next sailing of the Leyland Line will be as follows: *Mercian*, on or about December 16, for New Orleans, via Kingston, Ja.

Hamburg-American steamers leave for New York every Tuesday at 10 a. m., arriving there the following Tuesday, and for Port Limon every Tuesday or Wednesday via Bocas del Toro or Puerto Colombia.

Royal Mail steamers leave for New York on alternate Mondays at 5 p. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursday at 3 p. m.; for New Orleans via Port Limon and Puerto Barrios on Thursday at 6 p. m., and for New York on Thursday at 11 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3rd and 20th of each month.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, DECEMBER 7, 1910. No. 15.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Materials for Locks' Towing System.

A quantity of track material, about 8,000 tons, will be advertised for within the next few weeks. It is to form part of the rack railroad on which the electric towing locomotives, which will tow ships through the locks, will run along the top of the lock walls. It includes all materials necessary for the construction of the railroad, excepting a small quantity of materials on hand and the rails, splice bars, and steel track bolts; and includes also, 52 switches complete, with frogs. The larger items are: 3,212,544 pounds steel crossties, 1,934,240 pounds of rolled steel conductor-slot covers, 6,554,000 pounds of carbon steel rack castings, 831,744 pounds of copper conductor rails, 721,250 pounds of steel conductor rails, 1,273,090 pounds of steel channels. 445,000 pounds of malleable iron castings, and smaller quantities of tie clips, bolts, nuts, splice bars, rivets, insulators, etc. About 2,000 tons of 90-pound steel rail for the towing system will be included in the annual contract for rails.

The rack railroad will be installed by the Commission, and the delivery of the material extends over a period of two years, so that the erection may keep pace with the concrete construction of the locks.

Unimproved Sections of Panama and Colon.

In the new contract entered into between the Government of the United States, and the Government of Panama, relating to the method of payment for municipal improvements in the cities of Colon and Panama, published in THE CANAL RECORD of October 5, 1910, there is a provision for the proper laying out of unimproved sections of the cities before buildings may be erected thereon. In accordance with this section of the contract, the President of Panama has made a decree under date of November 7, 1910, sections 1 and 2 of which, are as follows:

Sec. 1. It shall be unlawful for any municipal or sanitary officer to grant a permit for the erection of a house, or other structure, in any of the unimproved districts, or portions, of the city of Panama, or the city of Colon, until after such district, or portion, in which such house, or other structure, is sought to be built, shall have been laid out and platted in municipal order, and a system of water works and sewerage has been duly installed therein, and the streets properly paved; all of which work must be installed in conformity with the terms of the contract above mentioned.

Sec. 2. It shall be unlawful for any person to commence the erection of any house, or other structure, in any unimproved district, or portion, of either of said cities, until after the public improvements required by the preceding section of this decree shall have been duly installed therein. Any person thus committing any violation shall be fined in any sum, not exceeding five balboas (B/5) for each day the structure, or part thereof, may remain on the premises; and should the owner of the structure refuse to remove it within a reasonable time, the said structure may be removed by the officials in charge of sanitation, and the cost of such removal shall be a lien on the material in the structure, which may be sold by the sanitary authorities to reimburse them for the cost of tearing down the structure.

The words "unimproved district, or portion, of the city," as used in this decree, shall be held to mean a district, or part, of the city, in which no houses or buildings exist at the time of the promulgation of this decree.

Section 1 is a preamble, and sections 3 and 4 provide for the enforcement of the provisions of sections 2 and 3.

Contract for Excavation.

The contract for excavating 112 450 cubic yards of earth from the Canal prism, opposite Gorgona, has been let to Llewellyn Swain of Empire at 21½ cents a yard. There were 11 bidders. The work will be done for Mr. Swain by B. B. Duncan of Las Cascadas. The unusually low price is due to the fact that about 10,000 yards of the material can be cast over into the Chagres River; 5,000 can be so dislodged with dynamite that the river will carry it away, and the longest haul on the balance is not over 150 feet.

Empty Cement Bags.

About 90 per cent of the bags in which cement is shipped to the Isthmus for use in the Pacific Division locks are saved and returned to the manufacturers, who allow 8½ cents apiece for them. The cement is shipped in a bag enclosed within another bag, both made from material of the same grade and weight, the allowance to each bag of cement, therefore, representing 17 cents. As fast as the bags of cement are emptied at the mixers they are loaded into box cars and carried to an old building, formerly used as a storehouse by the Pacific Division, situated a little north of the yard office at Miraflores, where they are sorted and baled. From 20 to 30 men, under a white foreman, are constantly employed in the sorting shed, and at the present time, a day's work in sorting and preparing for shipment represents from 25,000 to 35,000 sacks. The good bags are packed in bales of 100 each, and the torn or otherwise damaged bags, in bales of 50 each. The damaged bags are mainly utilized by filling them with sand for the construction of dikes. The bags are shaken before they are placed in the baling press, and the sweepings resulting therefrom amount to 50, or more, barrels a day. This cement is in good condition; is used in concrete operations in the locks, and the value of it pays the wages of the force employed at the sorting shed, including the foreman, but does not take into account the cost of gathering up the bags at the lock sites, and the haulage to the shed, which amounts to a small fraction of a cent per bag. Many of the bags sent to the States months ago are now returning filled the second time, and are still whole, capable of being used again. A statement of the number of good bags returned to the manufacturers from the beginning of concrete operations at the Pedro Miguel and Miraflores Locks, and the value thereof, is shown in the following table:

MONTH.	No. of bags	Value.
To April 25, 1910	740,000	$62,900.00
May	180,000	15,300.00
June	180,626	15,353.22
July	182,516	15,513.86
August	120,016	10,201.36
September	540,592	45,950.32
October	600,000	51,000.00
November	661,300	56,210.50
Total	3,205,050	$272,429.26

The cost of handling, less freight charges, during the month of October was $983.71 for 600,000 bags returned.

Gatun Locks.

The contractor for the lock gates has begun building an office and warehouse on the east side of the upper locks at Gatun. In the machine shop the work of building cranes for the gates has been begun.

Excavation by steam shovels in the lower locks is about 95 per cent completed, and at the present rate, should be completed by the end of January. This is all the excavation that remains within the lock chamber, and the excavation for the north approach walls will be done by suction dredge. Work has been begun on the lateral culverts for the lower locks, and should be completed about March.

New Commissary at Miraflores.

The new commissary at Miraflores was opened for business on November 1. It is housed in building No. 1, an old French type of quarters, used as an insane ward in the early days of American canal work, and later, as married quarters for laborers, situated near the double-track line of the Panama railroad. Numerous improvements and alterations were made in converting it into a commissary, and it is now a more valuable building than when it was first erected. It is divided into two sections, the rear section for use as a store room, and the front for the display and sale of goods. The counters are provided with railings to prevent persons from leaning upon them, and a new arrangement for serving the patrons has been established. Instead of being served inside, the customer enters, gives his order and receives his bill. He then retires to the veranda outside, hands the bill with his coupon book to the cashier through

NOTES OF PROGRESS.

(*Continued.*)

an open window, thence walks to the opposite end of the veranda and receives his goods through another window opening on the bundle counter. This method eliminates crowding in the small space allotted to customers, together with the consequent stuffiness, and is an aid to expeditious serving. No cold storage supplies are handled, as the commissary has no ice box, but orders for this class of goods are transmitted to the cold storage plant, Cristobal, by the storekeeper direct. A wagon road has recently been built from the commissary to the new railroad station on the relocated line.

Christmas Goods at the Commissaries.

Toys and other articles suitable for Christmas giving will be placed on sale at the commissaries between December 10 and 15. An order, amounting to about $3,000, was placed for this class of goods some time ago. It includes an assortment of mechanical toys, an extra quantity of cheap toys which usually sell well, and a large stock of dolls of different grades and sizes. An order for Christmas trees has also been placed, but in order that their freshness may be impaired as little as possible, the shipment will not reach the Isthmus until the week before the 25th. There was a comparatively small amount of Christmas goods left over from last year, less, in fact, than in any year since the commissary department has been making the sale of these goods a feature.

Guayacan Lumber Prices Excessive.

Proposals for furnishing 86,000 feet of guayacan, or lignum vitæ lumber in various lengths and sizes, for use in repair work at Gorgona shops, were opened at the office of the Purchasing Officer at Mount Hope on November 2. Two bids were received, one for supplying the lumber at 12 cents, and one at 10 cents, per foot, board measure, making the cost at the last named quotation in the neighborhood of $100 per thousand feet, board measure. Both bids were rejected as the prices were considered excessive, and oak lumber, which can be purchased in the States at about $35 per thousand feet, board measure, will be used in place of the guayacan.

Tin and Pipe Shop at Gorgona.

A tin and pipe shop 35 by 88 feet will be built at Gorgona shops. This will relieve the boiler shop of the tin and pipe section, and will add about 3,000 square feet of usable space for boiler work.

Head Nurse Examination (Female).

Applications will be received up to the close of business on December 20, for an examination to be held shortly thereafter to fill a vacancy in the position of head nurse (operating—female), at $480 per annum, together with board, quarters, and laundry, in the Freedmen's Hospital, Washington, D. C., and vacancies requiring similar qualifications in that hospital. Following are the subjects, with relative weights: (1) Anatomy and physiology, 5; (2) Hygiene of the sick room, 20; (3) General nursing, 20; (4) Surgical nursing, 20; (5) Obstetrical nursing, 20; (6) Experience in nursing, 15. Applicants will be required to show that they are graduates of recognized schools for trained nurses, which require a residence of at least two years in a hospital giving thorough practical and theoretical training. In addition, they must have had at least one year's post-graduate experience in an operating room, preferably in charge.

Women only will be admitted to this examination. Applicants must be citizens of the United States and have reached their twentieth, but not their fortieth birthday, on the date of the examination. Request should be made for application form 1312, mentioning the kind of examination.

JOHN K. BAXTER,
Secretary, Isthmian Civil Service Board.
Culebra, C. Z., November 30, 1910.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Concrete work in Gatun Locks is about 45 per cent completed, 932,162 cubic yards, out of a total of 2,085,000, having been placed at the close of work on December 3.

A statement of the amount of concrete placed in the locks each day for the week ending December 3, and of the total, follows; and a similar statement for the work in the Spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
November 28	1,836	29:14	8	1,004	13:40	2	291½	3,131½
November 29	2,010	32:42	8	1.098	13:40	2	315½	3,423½
November 30	1,998	33:43	8	1,012	13:40	2	307¼	3,317¼
December 1	1,896	36:22	8	1,044	13:40	2	256¾	3,196¾
December 2	1,903	31.32	8	1,062	13:40	2	287½	3,252½
December 3	1,652	27:26	8	934	12:40	2	226½	2,812½
*Portable mixer								69
Total	11,295	190:59	8	6,154	81:00	2	1,685	19,272
Previously reported								912,890
Grand total								932,162

*The portable ⅓-yard mixer at work on the wing wall, extending from the east wall of the upper lock into the hill, produced concrete as follows: November 28th, 26 yards; November 30th, 8 yards; December 1st, 15 yards; December 2d, 20 yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is about 52 per cent completed, 441,107 cubic yards, out of a total of 837,400, having been placed at the close of work on Saturday, December 3. An overflow of water into the locks from the Pedro Miguel River caused a diminunition in the output of the auxiliary plant on Saturday. The runways for the west chamber crane are being continued over and past the end sill section, in order that the crane may proceed with the construction of the center and west side walls to their points of termination. The record of concrete laid during each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
November 28	1,908	24:00	4	356	8:50	2	....	2,264
November 29	1,812	22:50	4	336	10:17	2	8	2,156
November 30	1,526	20:00	4	336	7:75	2	....	1,862
December 1	1,242	17:00	4	426	10:00	2	10	1,678
December 2	1,602	21:00	4	478	9:25	2	8	2,088
December 3	1,068	18:00	4	136	3:67	2	....	1,204
Total	9,158	122:50	4	2,068	49:34	2	26	11,252
Previously reported							3,769	429,855
Grand total							3,795	441,107

MIRAFLORES LOCKS.

The record of concrete placed in the upper lock at Miraflores during the six 8-hour working days of the week ending December 3, follows:

DATE.	AUXILIARY PLANT.										Total.
	2-cubic yard mixers.			½-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
Nov. 28	524	9:00	2	522	30:00	4	68	6:50	1	30	1,144
Nov. 29	348	7:00	2	336½	24:00	4	111	9:00	1	19	814½
Nov. 29	490	8:50	2	354	22:25	4	24	5:00	1	27	895
Dec. 1	400	7:33	2	434	29:75	4	94	8:50	1	15	943
Dec. 2	442	7:50	2	425	31:00	4	73	8:00	1	17	957
Dec. 3	360	6:00	2	242	11:75	2	21	2:00	1	10	633
Total	2,564	45:33	2	2,313½	148:75	3.67	391	39:00	1	118	5,386½
Previously reported										1,857	72,499½
Grand total										1,975	77,886

SLIDES IN CULEBRA CUT.

Preliminary Report of Chief Geologist, U. S. G. S.

A preliminary memorandum relating to side slopes in Culebra Cut, submitted to the President, through the Chief Engineer, on November 15, by Dr. C. W. Hayes, Chief Geologist of the United States Geological Survey, follows:

SECTION OF CANAL AFFECTED.

The practicable side slope depends on (1) depth of excavation; (2) character of materials, and (3) geological structure. Examination of the Cut indicates that serious difficulty through failure of slopes will be experienced only in the section between Empire and Pedro Miguel, or between stations 1720 and 1880. Small slides occur outside of this section, as at La Pita, but they are due to exceptional conditions and will be relatively unimportant.

CHARACTER OF MATERIALS.

Within the section defined above occur four distinct classes of materials in excavation, viz:

1. *Sedimentary Rocks*—This class includes: (*a*) volcanic agglomerates composed wholly of material ejected from volcanoes in the form of angular fragments varying in size from the finest dust to several inches in diameter; deposited in water but very imperfectly bedded; generally bluish green in color; moderately hard when first exposed, but crumbling rapidly in contact with the air.

(*b*) Fine grained clays; blue, red or black; composed largely of fine volcanic dust, which has been transported and deposited by water and is, therefore, well bedded; like the agglomerate, moderately hard when first exposed, but crumbling even more rapidly in contact with the air.

(*c*) Lignitic coal or black carbonaceous clay; beds, one to three feet thick, interstratified with the red and blue clays of (*b*).

These beds—(*a*), (*b*), and (*c*)—with some unimportant sandstones and limestones constitute the Culebra formation of tertiary age.

2. *Intrusive Igneous Rocks*—These are chiefly large masses of dark colored andesitic rock, which have been forced upward into the sedimentary beds, in some cases in a fluid condition, but more generally after having solidified. The intrusion was accompanied by tilting and crushing of the previously horizontal sedimentary beds. The andesite is generally intersected by numerous joints, but does not disintegrate readily on exposure, and where supported below will stand in vertical slopes. Gold Hill and Contractor's Hill are examples of these andesitic intrusive masses. All the other high hills in the Culebra section of the Zone are apparently due to the presence of similar rocks.

3. *Lava Flows*—A flow of light gray trachytic lava, 20 to 30 feet thick, occurs conformably interbedded with the Culebra clays throughout the central portion of the Cut. Its relations are exactly those of a sedimentary bed. The trachyte does not disintegrate readily, but by reason of its abundant joints, it does not afford any support to the clays above.

4. *Residual Clays*—All the rocks in this region are more or less deeply weathered and the original surface is everywhere covered with a residual deposit, generally clay, dark red in its upper prtions and varying shades of red and yellow below. This clay is derived directly from the rocks on which it rests and is thinnest over the intrusive andesites, because they decay less rapidly than the sedimentary rocks. It is thickest over those portions of the sedimentary rocks which have been so fractured as to permit the easy percolation of surface waters. It is usually separated from the underlying unweathered rock by sharp line, indicated by an abrupt change in color and texture.

FAILURE OF SIDE SLOPES.

The original three on two slopes have failed to stand at numerous points. Varying conditions have given rise to three classes of failures which may be designated (1) surface flows; (2) structural breaks, and (3) surface disintegration.

1. *Surface Flows*—Wherever the residual clay described above rests upon an inclined rock surface and the lateral support of the mass is removed, as is done when a trench is excavated, the portion of the mass lying above the unsupported side tends to flow down the sloping surface. The material has no cohesion within itself and very slight adhesion to the underlying rock. It acts like a viscous fluid and may flow on slopes as low as one on seven or eight. Having started as a purely surface flow it may gather sufficient momentum to carry down portions of the underlying unweathered rock, particularly if the latter has previously been deeply fractured. The Cucaracha and Paraiso slides are of this type. Between Gold Hill and Paraiso, a series of andesitic intrusions, east of the Canal, have given the sedimentary beds a westerly dip. They form a series of troughs pitching down toward the Canal. Moreover, the sedimentary beds, in addition to being tilted, have been deeply fractured and "slickensided," so that their cohesion is greatly reduced and the movement which started in the surface clays has extended some distance below the base of the clays and involved the underlying unweathered rock.

2. *Structural Breaks*—Every variety of rock has a limiting strength and if loaded beyond this limit will be crushed, or will flow. The crushing strength varies between very wide limits and is always lowered when one or more sides of the block are unsupported laterally. The weakest member in the sedimentary series occurring in the Culebra Cut is the lignite, or lignitic clay. When the lateral support is removed from a lignite bed it tends to give way under the weight of the overlying rocks and a slide results. The same result may occur, even if the weak bed is not cut through, but merely unloaded by excavating down nearly to it. In this case it flows out from under the load and bulges up in the excavation. This type of slide has occurred at various points between Empire and Gold Hill, and, in nearly every case, the immediate cause appears to be the failure of a lignite bed under the unbalanced pressure due to the excavation.

This type appears to offer more serious difficulties than the surface flows, and the obvious prevention is in making the slopes sufficiently low so that the weakest rock subjected to the unbalanced pressure shall not be loaded beyond the limit of its crushing strength. It seems reasonably certain that in the section of the Canal threatened by slides of this type less material will have to be removed if the slopes are lowered before the break occurs than afterwards.

3. *Surface Disintegration*—As previously stated, all the sedimentary rocks of this region tend to disintegrate very rapidly when exposed to the air. They first crumble into small angular fragments and eventually into the finest powder. Slopes cut in such rocks will rapidly disintegrate and crumble until they reach an angle on which the products of disintegration will lie and form a protective mantle. Vegetation will, of course, greatly assist in this protection. While the failure of the Canal slopes from this cause will not be a serious matter, it will involve the removal of a large amount of material in the aggregate, and constant attention for a long time.

Under certain conditions this surface disintegration becomes a more serious matter. For example, the contact between the intrusive andesite of Contractor's Hill and the sedimentary clays dips away from the Canal at an angle of 55°. The crumbling of the clays below the contact leaves the andesite mass overhanging, and the overhang will increase as the Canal is carried to its full depth and more clay is exposed. With a rock so much fractured as the andesite, this condition is unsafe and the exposed surface of the underlying clay should, therefore, be protected from further disintegration.

RECOMMENDATIONS.

1. A competent geologist should be employed on the Isthmus until the Canal is completed.
2. The geologist should continue the record of geologic facts, as revealed by the excavation, constructing a series of accurate cross sections. The work already done along this line by Messrs. Nichols and Raggi is extremely valuable and their zeal and intelligence cannot be too highly commended.
3. Additional core drill records should be obtained under the direction of the geologist, particularly to determine whether, or not, sedimentary beds of exceptional weakness occur in such position as to cause landslides of the structural break type.
4. The geologist should afford assistance to the engineers in determining the most economical slope for each section of the Canal, and the slope should be fixed, not arbitrarily, but in view of the known geologic conditions.

Baseball.

At the annual meeting of the Ancon Baseball Park Association held on November 26, the following officers were elected: President, Dr. J. C. Perry; vice-president, Dr. A. B. Herrick; secretary and treasurer, A. McGown; board of directors, Tom M. Cooke, Dr. W. E. Deeks, S. C. Russell. Provision was made to place the grounds in condition for the coming season's games.

Fatal Accident at Dock No. 11.

Thomas Brown, check No. 28096, was killed outright, and Charles McIntosh, check No. 28106, received injuries from which he died shortly after his removal to the hospital, in an accident on Saturday afternoon, December 3. The men were Jamaican laborers in the employ of the Panama railroad, and were engaged at the time in dumping cars of rock on the trestle extending out into the harbor from dock No. 11 at Cristobal Point. They had unfastened the chains on one of the cars, when a powerful wave struck the opposite side of the car causing it to tilt and overturn its contents, the mass of falling rock pinning the men between the body of the car and its trucks. An inquest was held on the body of Brown on Saturday night.

Personal.

Lieut.-Col. H. F. Hodges sailed on the *Parismina* for New Orleans on December 1, on his annual leave of absence.

Gatun Dam Spillway.

Concrete was placed in the Spillway of Gatun Dam during the week ending December 3, as follows:

Date.	Cubic Yards.		
	Concrete	Large rock.	Total.
November 28	250	4	254
November 29	216	....	216
November 30	218	16	234
December 1	296	....	296
December 2	286	....	286
December 3	304	....	304
Total	1,570	20	1,590
Previously reported	....	....	107,590
Grand total	....	....	109,180

Obituary.

A. R. Murphy of New York City died at Ancon Hospital on December 2, after an illness of about six weeks. He was 56 years of age, employed in the Mechanical Department at Empire, and had been on the Isthmus four and a half years. He is survived by a son, Wm. R. Murphy of New Orleans, La.

November Rainfall for Three Years.

Station.	1908	1909	1910	Station Average	Years of Record	Rai'y days 1910
Pacific Section–	*Ins.*	*Ins.*	*Ins.*	*Ins.*		
Ancon	9.12	15.14	4.29	10.94	14	23
Balboa	7.37	15.99	3.97	9.63	12	23
Miraflores	7.38	22.43	10.20	13.34	3	22
Pedro Miguel	8.65	20.38	10.02	13.02	3	25
Rio Grande	5.30	24.17	11.22	11.39	6	28
Central Section–						
Culebra	5.10	24.46	10.81	12.52	22	27
Camacho	6.65	27.07	13.15	14.70	5	27
Empire	[illegible].46	20.99	8.85	11.49	6	28
Gamboa	7.32	28.41	16.90	12.54	28	27
Alhajuela	10.55	36.22	14.87	14.70	12	29
El Vigia	12.07	35.64	14.20	20.64	3	27
Gorgona	......	30.24	11.54	14.37	7	20
San Pablo	8.90	27.59	13.15	15.14	4	25
Tabernilla	10.85	30.84	13.04	16.38	4	27
Bohio	19.01	35.39	22.37	19.39	17	29
Trinidad	14.19	33.28	22.95	23.47	3	29
Monte Lirio	25.57	34.73	25.60	28.63	3	30
Atlantic Section–						
Gatun	21.37	41.10	26.06	24.03	6	30
Brazos Brook	27.12	38.17	29.28	26.43	5	29
Cristobal	31.72	42.50	30.04	22.01	40	27
Porto Bello	41.73	45.03	23.08	31.85	4	28
Nombre de D	......	25.62	14.99	20.30	2	21

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending December 14, 1910 (75th meridian time):

Date.	High.	Low.	High.	Low.	High.
	A. M.	A. M.	A. M.	P. M.	P. M.
December 8	......	1.44	7.32	2.06	8.12
December 9	......	2.35	8.24	2.58	9.07
December 10	......	3.35	9.27	3.58	10.07
December 11	......	4.38	10.35	5.02	11.11
					A. M.
December 12	......	5.43	11.45	6.05	12.14
			P. M.		
December 13	......	6.44	12.51	7.05	......
December 14	1.12	7.40	1.50	8.00	......

THE HOURLY MEN.

President Taft Decides They May Have Four Weeks' Vacation, But No Increase In Pay.

On Board U. S. S. *Tennessee*,
En route for Hampton Roads,
November 19, 1910.

My Dear Colonel Goethals:

It is important that this decision should reach you promptly. I send it directly to you, therefore, and do not transmit it through the Secretary of War, to whom, however, I shall send a copy.

The question presented is made by the so-called hourly "gold" men on the Isthmus. They ask for a vacation each year of six weeks with pay, instead of two weeks with pay, which they now receive. Under the regulations of the Commission, men who are paid by the month receive a fixed compensation and enjoy a vacation of six weeks each year with pay. Originally no vacation allowance was made to the hourly gold men at all, and this, on the ground that they were allowed one and one-half times their regular compensation for every hour of overtime, that is, beyond the regular eight-hour day, while the monthly employes are not allowed pay for overtime at all, although under certain exigent conditions they are required to work beyond the regular day.

In August, 1908, the Reynolds Commission, consisting of Mr. James Bronson Reynolds, Mr. Samuel B. Donnelly, and Mr. Henry Beach Needham, considered the argument upon which the allowance of a vacation to monthly employes was granted and was denied to hourly gold employes. They recommended that no such distinction be made, but that the six weeks' vacation for one year be granted to all employes and a four weeks' vacation for the second year, with a view of permitting the employes of all classes to return to the United States once in two years, and to spend a month in the intervening year at a place nearer at hand where a healthful change of air could be secured. This was not adopted.

The petition of the employes was renewed and sent to Secretary Dickinson, and in September, 1909, he allowed the hourly gold employes a yearly vacation of two weeks with pay.

A new petition was filed by the hourly men during the present year and this was fixed for a hearing by me on the Isthmus during my recent visit. Three committees of hourly employes presented their views, and two of them argued that the discrimination against them, and in favor of the monthly men, in the matter of leave should be made up for, not by increased leave, but by additional compensation per hour. The consideration of this question by the Reynolds Commission includes certain data that are useful in reaching what seems to be a just conclusion in this case. They said:

> "The ground for declining to allow the hourly men vacation with pay is that they already are receiving time and a half for overtime, which the monthly men are not receiving. The question then is: Do the facts show that they receive an amount approximately equivalent to the sum which they would otherwise receive for the six weeks' vacation with pay?
>
> "Of the time earned in the month of February, 1908, by shop mechanics, 4.56 per cent was overtime. In computing this average it was found that the men employed in the Paraiso shops worked 12 per cent overtime, and those employed in some other shops had no overtime at all. In fact, a numerical majority of the mechanics earned little or no overtime. But since the principle is made to apply to all, the average benefit must be considered.
>
> "The total possible earnings of a mechanic paid by the hour at the rate of 65 cents per hour, at which rate the greater number of shop mechanics are employed, and who takes his vacation on his own time, amounts in a year to $1,465.20. Assuming that the overtime of all amounted to 5 per cent, that being the actual percentage of overtime in April, 1908, the total overtime earnings per capita would be $73.26 for one year. The regular earnings of hourly men receiving 65 cents an hour would amount to $187.20 for six weeks. If overtime work by the mechanics was considered as a substitute for a vacation with pay, it is evident that the actual average overtime pay is not a fair offset to a vacation with pay.
>
> " 'Gold' monthly men during the month of April, 1908, were paid $530,191.04, and 'gold' hourly men $157,145.26. Considering this month as a basis for comparison, the cost of the six weeks' vacation granted to the monthly men amounts to $795,286.56. The cost of granting an annual vacation with pay to the 'gold' hourly men, figured on the same basis, would amount to $235,717.89. On the basis of the month of April, the total earnings for one year of the 'gold' hourly men would be $1,885,743.12. Estimating overtime for all on the basis of 5 per cent, the amount representing overtime would be $94,287.15. This amount certainly cannot be considered as an offset, or in any way equal, to the amount of $235,717.89, which would be the cost of granting them vacations with pay on the same basis as the monthly men."

While the exact figures as to pay and overtime differ some from month to month, the conditions shown by this report are substantially the same as those which exist today, except that the overtime between shops is more equally distributed than it was at that time. It thus appears that under the order of Secretary Dickinson and the regulations for the payment of overtime, the hourly employes on the average now have the privilege of working approximately two weeks overtime, for which they receive 50 per cent more compensation than the regular rate of pay, and they also have two weeks' leave, for which they receive pay and do no work. For the overtime pay privilege of the hourly men averaging two weeks, we can find a rough equivalent in two weeks of the six weeks' leave of the monthly men who are required to work overtime, but who receive no pay for it. In addition to these equivalent privileges, however, the hourly men receive only two weeks' leave with pay, while the monthly men have four weeks.

The present arrangement with the monthly employes is fair and I do not wish to change it. In order to equalize the matter it would seem just to allow the hourly men four weeks' leave with pay, instead of two weeks' leave, as at present. This I have decided to grant beginning January 1, 1911, and further, to permit hourly employes to accumulate leave by postponing two weeks of it to the following year, and thus to have six weeks, instead of four, in the second year, in order that they may have the benefit of a more satisfactory visit to the United States.

In a recent order you permit the monthly men, when discharged on account of reduction of force, to accumulate their leave for two years if they shall have served two years without taking any leave. The same order should apply in the case of the hourly men.

I cannot grant the request to equalize the difference in terms of employment between the hourly men and the monthly men by increasing the wages of the hourly men. This would disarrange the whole scale of wages which has been carefully adjusted.

This order will take effect from January 1, 1911.

Sincerely yours,
Wm. H. Taft.

Colonel Geo. W. Goethals,
Chairman, Isthmian Canal Commission.
Culebra, C. Z.

FACING CULEBRA CUT.

Recommendations of Board on Revetment and Retaining Walls.

The board appointed for the purpose of determining, so far as present conditions permit, whether the faces of Culebra Cut should be revetted or protected by grouted rubble or concrete facings has submitted the following recommendations, which have been approved:

(1) The board is of the opinion that it is undesirable to attempt, under ordinary circumstances, to put in revetment for the purpose of protecting the faces of the Cut, until the full depth of the Cut has been reached.

(2) For the reason just stated, the board believes that unless something unforeseen should occur, there is no necessity, nor is it advisable, to begin any revetment work, properly so-called during the next dry season.

(3) The board is of the opinion that the preservation of a maintenance track on the east berm of the Canal is eminently desirable, if this result can be accomplished at a reasonable cost, and believes that the progress of the work up to the present time has not shown conclusively that such a track cannot be maintained without undue expense. The board, however, is unwilling to enter at the present time upon a policy which, in order to maintain the berm, might involve a large expenditure, before the possibility of such maintenance shall be conclusively established. For this reason, it believes that during the next dry season, the construction of retaining walls, or other supports, to the berm should be limited to situations where such support is necessary for construction purposes, and finds as the result of the inspection already described, but a single locality where it is prepared to recommend that measures be taken during the next dry season to support the berm, to wit:

> That portion of the 95-foot level on the east side of the Canal between stations 1870 and 1880, at the foot of the old Paraiso slide, where it believes that construction work requires the preservation of the track on the 95-foot level.

(4) The excavation has not yet reached the full depth at the point just mentioned, and the board suggests the following treatment for this locality, to wit:

> That after the dry season has set in a cut be made to full depth, or perhaps a little deeper than the bottom of the Canal, along the front of the unstable bank, extending into the bank outside of the side slope of the Canal, a distance sufficient to form the foundations for a retaining wall or support, the actual distance of the cut into the bank being determined by the manner in which the bank acts when the cut is being made. If the face of the bank remains reasonably stable and does not slide into the Cut, it may be possible to take out two shovel cuts before building the support. If so, the support may be constructed of riprap stone, with a dry facing, and probably without the use of concrete or mortar. If, on the other hand, the bank shows signs of moving when the first shovel cut is taken, a concrete retaining wall, back filled with dry rubble, will probably better meet the situation. The length of bank requiring this treatment is about 900 feet.

The board making the report consisted of Lieut.-Col. H. F. Hodges, Lieut.-Col. D. D. Gaillard and Civil Engineer (U. S. N.) H. H. Rousseau.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Hotel Tivoli, Ancon, C. Z., on Sunday, December 11, 1910, at 7.30 p. m. The program follows:

1 March—*Monstrat Viam*	Joy
2 Selection—*The Chocolate Soldier*	Straus
3 Two-step—*Angel Eyes*	Jergensen
4 Overture—*Lustspeil*	Keler Bela
5 Waltz—*Tres Jolie*	Waldteufel
6 Medley Selection—*Popular Hits*	Alford
7 *The Rosary* (By request)	Nevin
8 Concert Piece—*Hearts and Flowers*	Tobani
9 March—*Bersagleiri*	Eilenberg

Chas. E. Jennings, *Musical Director.*

The next concert will be given at Porto Bello on Sunday, December 18, at 2 p. m.

The audit of all issues made from Quartermaster's stores on the Isthmus during the first six months of 1910 was begun by the Chief Quartermaster's office force immediately after July 1 and was completed on October 13. There were approximately 8,000,000 individual issues during the period mentioned and to secure an absolute check each item was passed on by five different persons.

RAINS AND FRESHETS.

Canal Work Retarded by Rain and Floods.

Heavy and continuous rains during the past week caused inconvenience to the Canal work in all divisions, and affected the railroad service across the Isthmus.

A freshet in the Chagres River was reported from the gaging station at El Vigia at 4 o'clock on the morning of December 3. It reached its crest at Gamboa at 6 o'clock that evening, when it was 64.6 feet above sea level; at Bohio at 7 o'clock the following morning, when it was 30.2 feet above sea level, and at Gatun on the afternoon of December 5, when it was 26.05 feet above sea level. At its crest the freshet reached 108.7 feet above sea level at Alhajuela on the upper Chagres, which is 1.9 feet lower than the freshet of December 7 to 18, 1909. A comparison of this freshet with the heaviest freshets of 1909 at Gamboa and Alhajuela, follows:

		Feet above sea level.
December 3, 1910	Alhajuela	108.7
	Gamboa	64.6
November 19, 1909	Alhajuela	111.4
	Gamboa	72.6
December 11, 1909	Alhajuela	110.6
	Gamboa	67.9
December 26, 1909	Alhajuela	121.
	Gamboa	78.2

The stages of the river at various stations during the past week are shown in the following table:

DAY AND DATE	STATION.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun. Nov. 27	128.9	95.6	51.0	19.7	18.6
Mon. Nov. 28	127.8	94.3	48.3	19.2	18.6
Tues. Nov. 29	136.5	100.1	53.8	20.8	19.0
Wed. Nov. 30	138.6	101.2	55.9	21.3	19.4
Thurs. Dec. 1	133.5	98.6	55.9	22.8	20.5
Fri. Dec. 2	133.2	98.0	53.7	22.9	20.8
Sat. Dec. 3	150.9	108.7	64.6	29.0	22.6
Height of low water	125.0	92.0	46.0		

A comparison with previous floods is a fair one only so far as it concerns Alhajuela, because local conditions have made the records at Gamboa, Bohio and Gatun incomparable with those of previous years. Immediately below the gaging station at Gamboa, the Canal channel has been completed and the river, which formerly pursued a tortuous course, now flows through the broad and straight channel, thus the water escapes more rapidly than in previous years. At Gatun, the diversion channel, through which the river flowed last year at sea level, has been closed and the water now escapes through the Spillway channel, the bottom of which is 10 feet above sea level. This flood in former years would have covered the flat land at Gatun with a few feet of water where under present conditions it raises the surface of the lake formed by Gatun Dam to a height of 26 feet.

The conditions incident to the flood were anticipated so far as the valley below Gamboa was concerned. Last July the occupants in the lake region, whose buildings were below the elevation it was believed a flood would reach, were warned to move to higher ground. These elevations expressed in feet above sea level were given as follows: Tabernilla, 40 feet; Frijoles, 35 feet; Bohio, 30 feet; Ahorca Lagarto, 28 feet; Gatun, 25 feet. The prediction was correct in every case, as the surface of the lake during the flood of last week corresponded to the heights given in July, excepting that at Gatun, where the elevation was affected by a small jam of logs and other débris at the mouth of the Spillway.

The flooding of the present main line of the railroad between Gatun and Frijoles was anticipated and a schedule for trains over the relocation of the Panama railroad was published on October 19. With a few delays this schedule was followed.

Central Division.

The rain filled the diversion channel, which keeps the water from the Obispo River watershed on the east side of Culebra Cut from flowing into the excavation, and on December 1, the diversion bank broke at a point opposite Empire, immediately south of the place where the break occurred on May 7, 1910. This break was filled, but on the 3d the water forced it out again and the repairs were not completed until the night of December 4. A portion of the water from the diversion flowed into Culebra Cut and flooded it from Las Cascadas to Bas Obispo, so that no work could be done in that section. Nine steam shovels were forced to suspend and the hauling of spoil from the north end of the Cut was interrupted. The rain accelerated the numerous mud slides, and so interfered with track work that the output from the south end of the Cut was also lessened. The shovels at work at Gorgona and Mamei were forced to suspend.

Pedro Miguel Locks Partially Flooded.

A freshet in the Pedro Miguel River, aided by the back set of the tide, combined to cause a partial flooding of the locks at Pedro Miguel on Saturday of last week. The water found its way into the locks between 8 and 9 o'clock in the morning and stopped the concrete work in the end sill section for the remainder of the day. The work of the permanent handling plant, however, was uninterrupted, as the trestles on which the trains run to supply concrete to the chamber cranes were well above the flood level.

A pumping plant was formerly located at the extreme south end of the Pedro Miguel lock pit, which discharged water through a steel pipe culvert laid under the west bank to the low land beyond. The high water covered this low section and rose over the mouth of the pipe, which thus served as a conductor for the water to enter the lock pit. The earth around the pipe was also undermined and a torrent of water poured through the opening and followed the sides of the guide wall toward the locks. Earth dikes were hastily thrown up, but these failed to stay the flood's progress, which, when it first entered the locks, resembled a moving wall of water. The opening was finally filled with bags of sand, but by the time the dam was completed, the water stood 10 feet deep in the low places, reaching to one inch above the floor of the present pumping station, and to a depth of a foot over the higher floor levels. The pumps were kept going steadily all of Saturday night and Sunday, and by Monday, most of the water had been removed.

"Norther" at Atlantic Entrance.

A "norther" of short duration, but of sufficient severity to cause all large vessels to leave their berths at the Colon docks and to interrupt temporarily the Atlantic Division water transportation service with Porto Bello and Nombre de Dios, occurred in Colon on Friday and Saturday of last week. It was also responsible for the beaching on the Colon water front of a 600-cubic yard steel barge in the service of the Atlantic Division, loaded with rock. The storm arose about midday, Friday, reached its maximum force Friday night, and began to abate Saturday afternoon. During its height, the waves dashed over the protection levee along Roosevelt avenue, Cristobal, carrying with them stones and shore débris, and in places, badly washing out the road. The steamships *San Mateo* of the California and Atlantic Steamship Company, the *Versailles* of the French Line, and the U. S. S. *Tacoma* rode out the blow in the open roadstead, while the *Santa Marta* and *Atenas* of the United Fruit Company sought shelter at dock No. 11. The *Santa Marta* was due to leave Friday night, but remained in port until Saturday night.

The tug *Reliance* of the Atlantic Division towing fleet left for Nombre de Dios, with two barges in tow, on Friday afternoon, reached there safely, and returned without a tow on Saturday. No shipments of sand or stone were received on Saturday, but the regular service was resumed on Sunday. There was no communication by boat with Toro Point on Saturday, and the telephone service was also interrupted. It was feared at one time that the high seas would carry away a part of the breakwater trestle, but it held, and beyond washing out some of the fill, the damage was small.

The accident to barge No. 7 occurred about 9 o'clock on Friday night. It was the last of two barges loaded with crushed rock in tow of the tug *Mariner*, which had made the trip from Porto Bello in safety, and had reached a point opposite Manzanillo Island, when the heavy seas caused the hawser to part, and rapidly carried the barge shoreward. It struck the reefs in front of the Washington Hotel, about 300 feet from the shore, broadside on, and immediately grounded. The captain and the two barge hands reached land, with the assistance of some spectators, who swam out and pulled them in. The men were bruised and exhausted, especially the captain, who was taken to the hospital for treatment.

The sea subsided sufficiently to permit the work of floating the barge to commence actively on Tuesday morning. A bulkhead has been built around the boiler room, the room baled out, steam raised, and siphons started. The original house was carried away from the barge by the storm. The extent of the damage to the hull is not yet known.

Unusually Heavy Rainfall.

There was an unusually heavy rainfall at Culebra and nearby stations during the noon hour on December 1. The precipitation was heaviest at Camacho reservoir, where 3.48 inches were recorded. At Empire, between 11.25 and 12.35 o'clock, 1.40 inches were recorded; at Culebra, during the 62 minutes following 11.45 a. m., 2.67 inches, and at Rio Grande, between 11.50 a. m. and 1 p. m., 2.25 inches.

Steam Shovel Men and Dredgemen.

The next regular meeting of the A. U. of S. S. and D. M. will be held in the I. C. C. lodge hall at Culebra on Sunday, December 18, at 2.30 p. m. All brotherhood men are requested to be present.

EDWARD FENSTERMACHER, *Secretary.*

Culebra, C. Z., December 5, 1910.

SOCIAL LIFE OF THE ZONE.

Miscellaneous Events.

Commissioner and Mrs. M. H. Thatcher were guests of the Paraiso Woman's Club on the night of December 2. After dinner at the Commission hotel, they were entertained at the home of Mrs. E. H. Ellenwood and then went to the Commission lodge hall, where a public meeting was held, with Mrs. H. W. Coutermarsh presiding. Mr. Thatcher delivered an address on the necessity of ideals in real success. Mrs. Wm. Frazee and Miss Vacher played the piano. A collation was served.

The congregation of St. Mary's Church in Empire tendered a reception to Chaplain and Mrs. H. A. Brown at the Commission clubhouse in the village on the night of November 30. During the evening, songs were sung by W. G Ross, A. B. Dickson, and Mrs. A. Faure, and Miss Smith played the violin and Mrs. Dickson and Mrs. Hall, the piano. Refreshments were served and there was dancing

A missionary meeting will be held by the Women's Foreign Missionary Society at the Methodist church in Panama at 7.15 o'clock on the evening of December 11. Mrs. Gray will read a report of the meeting of the general executive body held recently in Boston.

A bazaar will be held in the Commission clubhouse at Empire, on December 14, for the benefit of the organ fund of St. Mary's Episcopal church. It will be conducted by the Woman's Guild and will be followed by dancing.

The committee of the Colon Humane Society in charge of the Christmas entertainment for the poor children of that city announce that it will be held on Saturday afternoon, December 24. The exercises will take place in the children's playground, but if rain interferes, the new schoolhouse for girls, situated close by, will be used. There will be a Christmas tree, and Mrs. P. T. Murphy, who is now in the States, has been commissioned to purchase 1,000 small presents for distribution on that occasion.

Improved Order of Red Men.

A joint meeting of the tribes will be held at Paraiso on Saturday evening, December 10, in the wigwam of Aztec Tribe, No. 4. This will take the place of the monthly intertribal meeting, usually held the first Sunday in the month, but which was postponed on account of the Kangaroo memorial services last Sunday. Matters of interest to all the tribes will be brought up at this meeting and a large attendance is expected. Degree teams from three tribes will be in attendance and the tribes are requested to bring their "palefaces" to this meeting for adoption. An entertainment and "smoker" will be held after the meeting.

W. H. KROMER, *D. G. I.*

Cristobal, C. Z., December 5, 1910.

Missing Men.

Any one having information regarding the whereabouts of John H. Fisher, who was at one time employed as a locomotive engineer on the relocation of the Panama railroad, will please communicate with J. W. Benjamin, Mechanical Department, P. R. R., Cristobal, C. Z.

Information regarding Roy Garnier, supposed to be on the Isthmus, is desired by his mother, Mrs. J. H. Drury, La Plata, Mo.

Any one having information regarding the whereabouts of Thomas J. Fitzpatrick, who left Mechanicsville, N. Y., about five years ago to come to the Isthmus, is requested to communicate with THE CANAL RECORD.

ORDINANCES.

Taxes on Vehicles for Public and Private Use.

The following ordinances enacted by the Isthmian Canal Commission at its 158th meeting on August 25, 1910, were approved by the Acting Secretary of War, October 31, 1910:

ORDINANCE.

Be it Enacted, by the Isthmian Canal Commission, that paragraph "*a*", section 7, of the "Regulations Providing for Certain Taxes and Licenses in the Canal Zone other than for the Sale of Intoxicating Liquors," effective July 1, 1908, is hereby amended to read as follows:

> For operating for hire a public coach or carriage, not operated by motor power, for the transportation of passengers, a license tax of $1.25 per month shall be charged; for a public cart, dray, or other public vehicle, not operated by motor power, the following license taxes shall be charged, namely: For each two-wheel vehicle, $2.50 per month; for each four-wheel vehicle, $5 per month. *Provided, however*, that in the construction and application of this section all vehicles which are used on the public roads of the Canal Zone for the transportation of merchandise, or other articles of value, by merchants and dealers, shall be held to be subject to license as provided in this section. *Provided, however*, that the license taxes in this section enumerated shall not apply to conveyances of the herein indicated character wherein passengers are transported for hire, which are duly licensed in the Republic of Panama.

ORDINANCE

Providing for the licensing and regulation of motor vehicles in the Canal Zone.

Be it Enacted, by the Isthmian Canal Commission, as follows:

> Section 1. That, hereafter, there shall be collected and accounted for, as other similar taxes, the following license taxes from the owners or operators of motor vehicles used or employed on the streets or roads of the Canal Zone, namely: (*a*) For each motor vehicle (except motor cycles) used for the transportation of freight or passengers for hire, or for the transportation of merchandise or freight by any merchant or dealer, one hundred and fifty dollars ($150) per annum; (*b*) for each motor vehicle (except motor cycles) operated for pleasure, twenty-five dollars ($25) per annum; and (*c*) for each motor cycle ten dollars ($10) per annum.
>
> Section 2. Before any person shall use or operate any motor vehicle on the public roads or streets of the Canal Zone, he shall procure from the Collector of Revenues of the Canal Zone Government a license authorizing him to use and operate such motor vehicle on said public roads or streets.
>
> Section 3. Each motor vehicle operated on said roads or streets shall at all times, when so operated, carry thereon, at a conspicuous place at the rear thereof, a metal tag or card bearing thereon, in large numerals, the number of the license for such vehicle. It shall be the duty of the Collector of Revenues, when such license is issued, to furnish to the licensee said metal tag or card bearing said number, and the licensee shall, in addition to the license tax, pay to said collector a fee of one dollar ($1) for furnishing said tag or card, which fee shall be accounted for by said collector to the Zone Government in the same manner as are such license taxes. It shall be unlawful for any person to operate or use on said roads or streets any motor vehicle unless the same bears, at a conspicuous place at the rear thereof, such numeral tag or card.
>
> Section 4. The Collector of Revenues shall keep a register, wherein he shall number, in consecutive order, all licenses granted by him under this ordinance, and the names of the licensees, and a brief description of the motor vehicle licensed. Such register shall be a public record. Said collector shall, immediately upon issuing any license herein provided for, give notice thereof, and furnish the information shown by the aforesaid register, to the Chief of Police, who shall cause arrests to be made for violations of this ordinance.
>
> Section 5. Before the Collector of Revenues shall issue any license hereunder for the operation of any motor vehicle, he must be satisfied, from proof furnished, or from his personal investigation that such motor vehicle for which license is desired can pass with ease and safety on any turn or part of any public road or street of the Canal Zone any other vehicle authorized by law to travel thereon. The said collector's refusal to issue any license indicated herein may, upon the formal request of the refused applicant, be reviewed by the Head of the Department of Civil Administration, whose decision shall be final.
>
> Section 6. All motor vehicles shall, when being operated on any of the Canal Zone streets or roads, between the hours of 6 p. m. and 5 a. m., carry and prominently display lights, as follows: Automobiles, or motor vehicles of similar construction, two bright front or headlights, one on either side, and one red light at the rear; motor cycles, one bright headlight.
>
> Section 7. Except as to the requirements for the use of lights, as provided in section 6 hereof, this ordinance will not apply to motor vehicles, which may be used on the public roads or streets of the Canal Zone under the authority of the Chairman of the Isthmian Canal Commission, or of the Secretary of War, for official purposes.
>
> Section 8. The term "motor vehicle," as used herein, shall apply to and include every vehicle or conveyance which may be drawn or propelled by means of steam, gas, naptha, fluid, electricity, or other similar motor power.
>
> Section 9. Any person violating any provision of this ordinance shall be deemed guilty of a misdemeanor, and shall, upon conviction in any district court of the Canal Zone, be punishable by a fine not to exceed fifty dollars ($50), or imprisonment not to exceed 30 days, or by both such fine and imprisonment in the discretion of the court.
>
> Section 10. This ordinance shall be effective from the date of its approval by the Secretary of War.

Rainfall from November 1 to 30, Inclusive.

MIDNIGHT TO MIDNIGHT.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	.80	25	4.29
Balboa	.92	25	3.97
Miraflores	1.91	21	10.20
Pedro Miguel	1.94	11	10.02
Rio Grande	3.25	11	11.22
Central Section—			
Culebra	2.02	29	10.81
Camacho	1.96	12	13.15
Empire	1.86	29	8.85
Gamboa	3.02	11	16.90
Alhajuela	2.55	30	14.87
El Vigia	1.60	21	14.20
Gorgona	1.48	6	11.54
San Pablo	2.98	11	13.15
Tabernilla	2.79	11	13.04
Bohio	3.17	20	22.37
Trinidad	2.20	13	22.95
Monte Lirio	2.50	4	25.60
Atlantic Section—			
Gatun	3.69	7	26.06
Brazos Brook	4.02	1	29.28
Cristobal	3.65	30	30.04
Porto Bello	3 89	4	23.08
Nombre de Dios	4.58	4	14.99
Bocas del Toro	2.22	3	6.54

The station rainfall for November covered an unusually wide range, the totals varying from 3.97 inches at Balboa, to 30.04 inches at Cristobal. The rainfall at Ancon and Balboa was the lowest of record for November at these stations. There was a deficiency in average cloudiness over the Pacific section. The maximum temperature in the sun at Culebra was 96 degrees Fahrenheit on November 16.

Proposals for Excavation, Obispo Diversion.

Sealed proposals for excavation of about 21,942 cubic yards of earth, located between stations 1602 and 1612 on the east bank of the Canal, will be received until 2 p. m., December 15, 1910, and then opened. Full information will be furnished by the division engineer, Empire. Envelopes containing proposals must be endorsed "Proposals for Excavation, Obispo Diversion," and addressed C. A. DEVOL, *Chief Quartermaster.*

WEATHER CONDITIONS, CANAL ZONE, NOVEMBER, 1910.

STATIONS.	Press're (reduc'd to mean of 24 hours.)	Temperature.					Mean relative humidity.	Precipitation.			Wind.				
		Mean.	Maximum.	Date.	Minimum.	Date.		Total inches.	Station average.	Number of rainy days.	Total movement (in miles.)	Prevailing direction.	Max. velocity (in miles.)	Direction.	Date.
Cristobal	29.844	77.8	88	14	71	12	90	30.04	22.01	27	6,215	W	30	W.	3
Culebra	29.838	77.9	88	16	69	12	94	10 81	12.52	27	4,767	N.W.	22	N.W.	6
Ancon	29.830	79.0	89	18	70	1	91	4.29	10.94	23	5,036	N.W.	23	N.W.	6

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

STATISTICAL REPORT FOR OCTOBER.

Total membership	1,856
Total number of bowling games	7,029
Number different tournaments	16
Total number tournament players	226
Total number pool and billiard games	15,766
Total income from soda fountains	$2,724.69
Number different men using gymnasiums	247
Total attendance of men using gymnasiums	1,513
Number enrolled in chess and checker clubs	43
Number enrolled in glee clubs	31
Number enrolled in dramatic and minstrel clubs	84
Number enrolled in camera clubs	73
Number enrolled in Bible clubs (discussion)	282
Number of members of libraries	793
Total number of books withdrawn	2,116
Number of religious meeting	1
Attendance	45
Number of local entertainments	21
Attendance	4,643
Number functions outside association management	9
Attendance	1,163
Number afternoons for women	43
Attendance	372
Number evening functions to which women invited	24
Attendance	1,513
Number different men on committees	181
Number of men called on in hospitals	432
Number of letters written at public tables	6,016
Total attendance at buildings	71,183
Average attendance per day	2,251
Number of beds used during the month	495

Boys' Department.

Number of members	83
Number of afternoons for boys	72
Average attendance per afternoon	47
Total attendance in systematic gymnasium work	664
Outings and other special features	6

CULEBRA.

The bowling game between Gatun and Culebra resulted in Culebra winning all three games. Scores: Culebra, 876, 950, 768; Gatun, 667, 598, 654.

The following is the standing in the big pin tournament for the Putnam medal:

Name.	Won.	Lost.	Name.	Won.	Lost.
Cohen	4	0	Hayes, G.C.	2	3
Herrington	2	4	Hurst	1	3
Huttlemeier	6	2	Warner	0	1
Cornthwaite	3	4	Sickler	1	1
Fleischman	3	3	Koperski	0	1

The following is the standing in the duckpin tournament:

Name.	Won.	Lost.	Name.	Won.	Lost.
Case	3	1	Gould	1	2
Conlan	3	1	Hill	0	3
Cushing	2	1	Hurst	0	0
Dakin	1	2	Huttlemeier	1	0
Dubois	0	0	Fleischman	4	1
Fitts	0	4	Cornthwaite	3	1
Freeman	0	0	Kersey	3	0
Frederichs	0	0	Sickler	2	4

The following are the winners of the monthly prizes for the month of November: Duckpins—Kersey, high score, 114; Fleischman, high average, 86.1. Big pins—Huttlemeier, high score, 229; Case, high average, 174.

A glee club was organized on November 29 and it will meet every Tuesday.

An informal "social" will be held on Friday, December 9.

EMPIRE.

The following program will be given under the auspices of the musical and dramatic society, Sunday evening, December 11, at 8 o'clock:

"Nazareth" .... *Gounod*
Mr. Young, chorus, and instrumental quartet.
Aria .... *Gluck*
Mr. Dohrmann, with violin obligato by Mrs. Decker.
"Noel" .... *Adam*
Mrs. Ludwig, chorus, and instrumental quartet.
"Fear not ye, O Israel!" .... *Buck*
Mrs. Faure.
Address.
Hon. Maurice H. Thatcher.
Violin solo, selected.
Mrs. Decker.
"When Night Involves the Skies" .... *Shelly*
Mixed quartet, accompanied by the instrumental quartet.
"The Birthday of a King" .... *Neidlinger*
Mrs. Ross.
Selection.
Instrumental quartet.

At the meeting of the literary society on December 9, the following program will be presented: Essay, Mr. Rossiter; address, Mr. Wagg; political discussion on the recent election in the states; parliamentary quiz, led by J. R. McNiel.

The following high scores were rolled during the week: Shaughnessy, 206, 204; Sawtelle, 206, 215; Rieman, 209; Potter, 204. High score for the month of November, Nicodemus, 249.

The following program will be given as a vaudeville entertainment under the auspices of the musical and dramatic society, Tuesday evening, December 13: Sketch, "Two busted coons," Young and Evans; cartoons, E. W. Stolberg; tenor solo, "Dreams," S. H. Brodsky; "Winter song," glee club; soprano solo, Mrs. Ludwig; monologue, Ed. Keeling; soprano and tenor duet, Miss Gnuey and Mr. Ross; "Kathleen," Mrs. Faure; songs, Miss Gorham and Mr. Evans; sextet from "Lucia di Lammermoor," Mrs. Ludwig, Mrs. Faure, Messrs. Ross, Dohrmann, Young, and Conner.

GORGONA.

Persons wishing to enter a class in mathematics will kindly leave their names at the desk. Mr. Oscar Kuentz, a graduate of the University of Wisconsin, will act as instructor. The class will meet Tuesday and and Friday nights at 7.15 o'clock.

The "Every Day in the Year Club" meets every Friday at 7.05 p. m., in the committee room of the clubhouse. All men are cordially invited.

The Gorgona Dramatic Club will put on the comedy-drama "Esmeralda" some time this month. The actors are: Dan Hays, Fay Kramer, M. Meeks, Roy Ling, Ed Emery, Mrs. Spencer, Nell Wertz, Mrs. Fahr, and Mrs. Treabor.

Empire's bowling team took three straight games from the local team on Thursday December 1.

Following are the 200, or over, scores for the month of November: Arnold, 209, 204, 200, 200, 202, 201, 200, 200; Humphrey, 212; White, 202, 202, 238; Hopkins, 203, 212, 200, 201, 245; Witmer, 209, 200, 208, 220; Roper, 216, 205, 227, 200; Halderman, 202, 206, 202, 234; McConaughey, 226, 223, 212, 203, 201; Cleary, 204; R. Varenkamp, 218; Haggerty, 206; Stewart, 215, 225; M. Varenkamp, 221; Mrs. Corcoran, 202, 207, 241, 201.

The basketball game on Saturday night, December 12, between Cristobal and the local team is the last match between these two teams in the present series.

GATUN.

The educational committee met on Thursday night, December 1, and elected W. H. Brown, chairman, and G. H. Dougherty, secretary. It was decided to start classes in mechanical drawing and stenography on Wednesday, December 7. Classes in other studies will beorganized providing a sufficient number are interested.

The membership committee, which is conducting a lively campaign for 500 members by February 1, reported on December 1st, 391 members.

A "smoker" will be held on Thursday, December 15, at which an informal reception will be given to the new members.

A glee club was organized last Thursday under the direction of A. B. Dickson of Empire.

A phonograph "social" was given on Friday night, December 2. About 50 records, owned by H. Levy, were played. Refreshments were served.

PORTO BELLO.

Wilson finished first in the pool tournament and won the billiard cue. F. M. Hill won the second prize, a box of cigars.

A committee has been appointed to arrange for a Christmas program, consisting of Mrs. E. B. Pflueger, C. E. Van Fleet, and W. J. Washburn.

The discussion club on Tuesday night, November 30, was led by F. C. Freeman; subject, "Leadership." Twenty-five men attended the meeting, and Messrs. Bradley and MacDougal gave a short entertainment, with songs and readings.

Sale of Sheds at Public Auction.

There will be sold at public auction by the district quartermaster at Gatun, C. Z., at his office, at 3 p m., Tuesday, December 13, 1910, to the highest bidder for cash, the following Isthmian Canal Commission property:

Two small galvanized iron sheds now half covered by Gatun Lake, which were formerly used as dynamite sheds by the Central Division.

These buildings will be removed from the premises by the successful bidder within thirty (30) days from date of sale.

The Government reserves the right to accept or reject any or all bids. For further information apply to the district quartermaster, Gatun, C. Z.

C. A. Devol, *Chief Quartermaster.*

LOST—A card case containing membership cards to the Kangaroos, International Brotherhood of Steam Shovel Engineers, U. B. of R. E., and an I. C. C. annual pass book. Finder will receive reward by returning to owner, R. B. Leftwich, house No. 106, Paraiso, C. Z.

OFFICIAL CIRCULARS.

Seniority of Locomotive Engineers and Conductors

Culebra, C. Z., December 1, 1910.

Circular No. 348-B. (Superseding Circular No. 348):

The seniority of locomotive engineers and conductors of the Isthmian Canal Commission and Panama railroad relocation will be governed by the following rules, effective December 1, 1910:

1. The seniority of engineers and conductors will be determined by the date they entered the service as engineers or conductors, regardless of transfers from one division to another. Increase to qualified pay will depend on the date started on main line work.

2. When additional qualified men are needed, the senior unqualified man in the service (all divisions) will be given an opportunity to qualify, provided he has the requisite railroad experience.

3. If it becomes necessary to qualify a man, and the employe entitled to promotion is sick or on leave of absence, a temporary promotion of the man next on the list may be made with the understanding that the senior man will supersede him on his return to duty. In such case, the date the temporary man qualifies will also be given the senior.

4. Seniority will not hereafter be affected by absence from duty so long as the employe's service is continuous.

5. In case of reduction of force, discharges will be made as follows, all divisions being considered as one service:

A. Aliens.

B. Men who have been reported for being in the hospital for alcoholism.

C. Men habitually sick, or physically unfit for Isthmian service, as shown by repeated absences from duty.

D. Men with unsatisfactory records (to be determined by the Division Engineer.)

E. Men at the foot of seniority list.

6. The seniority of a qualified man transferred to the Panama railroad will date from his transfer.

7. The conductors and engineers on the P. R. R. relocation work will be included in the I. C. C. seniority lists and will be subject to these rules the same as though they were employes of the Commission.

8. If a qualified man refuses an offer to transfer to the Panama railroad operating department, he will thereafter have no right to such a transfer, and his name will be marked on the seniority list as having refused transfer.

9. In case of reduction of P. R. R. force, qualified men may be transferred to the I. C. C., and resume their seniority standing.

10. Personnel of crews in charge of existing runs will not be changed by this seniority order, except as vacancies occur.

Geo. W. Goethals.
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Vacations in Costa Rica.

Culebra, C. Z., November 30, 1910.

Heads of Departments and Divisions:

On account of improved sanitary conditions in Costa Rica, employes of the Isthmian Canal Commission and of the Panama Railroad Company will again be permitted to spend their vacations there, but they will be subject to five days' quarantine at Colon upon their return, unless they go directly from the train to the steamer at Port Limon, and can produce a certificate from the American Consul at San José, showing that they spent the last five days of their leave in that city.

By direction of the Chairman,

C. A. McIlvaine, *Chief Clerk.*

Sale of Miscellaneous Articles at Public Auction.

There will be sold at public auction by the district quartermaster at Empire, C. Z., at his office, at 3 p. m., Thursday, December 15, 1910, to the highest bidder for cash, the following Isthmian Canal Commission property:

One lumber wagon, 13 duck balls, 39 bowling balls, assorted sizes, 8 old French axes, 20 old worn tires.

Payment will be effected and articles removed immediately upon completion of sale. The Government reserves the right to accept or reject any or all bids. For further information apply to the district quartermaster, Empire, C. Z.,

C. A. Devol, *Chief Quartermaster.*

The following vessels arrived at and departed from the port of Balboa during the week ending December 3:

Arrivals—November 27, *Stanley Dollar*, from San Francisco, *Chile*, from Valparaiso; November 28, *Pennsylvania*, from San Francisco; December 1, *Newport*, from San Francisco and way ports; December 3, *U. S. S. Yorktown*, from Corinto, *Arica*, from Guayaquil.

Departures—November 27, *Ecuador*, to Guayaquil; November 29, *City of Panama* to San Francisco and way ports; November 30, *Aysen*, to Valparaiso; December 2, *G. W. Fenwick*, to San Francisco, *Beachy*, to Puget Sound.

COMMISSARY DEPARTMENT.

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning December 1.

Shoes at the Commissaries.

PANAMA RAILROAD COMPANY,
COMMISSARY DEPARTMENT.
CRISTOBAL, C. Z., December 1, 1910.

CIRCULAR No. 240:

To All Concerned: This department does not guarantee canvas or patent leather shoes, as we cannot obtain any guarantee from the manufacturers. Purchasers will understand that such shoes are bought at their own risk.

JOHN BURKE, *Manager.*

Approved: EUGENE T. WILSON,
Subsistence Officer.

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	7
Shoulder, neck trimmed off, (4 lbs. and over), per pound	10
Entire forequarter (not trimmed) 10 pounds and over, per pound	9
Leg, (8 to 10 pounds), per pound	19
Cutlets, per pound	20
Short cut chops, per pound	22
Lamb—Stewing, per pound	7
Entire forequarter, neck trimmed off, per pound	10
Leg (5 to 8 pounds), per pound	24
Chops, per pound	26
Cutlets, per pound	26
Veal—Stewing per pound	10
Shoulder for roasting (not under 4 pounds), per pound	15
Loin for roasting, per pound	19
Chops, per pound	22
Cutlets, per pound	26
Pork cuts, per pound	*19
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	9
Corned, per pound	12, 14, 16
Chuck roast, (3 pounds and over), per pound	13
Pot roast, per pound	15
Rib roast, second cut (not under 3½ pounds), per pound	18
Rib roast, first cut (not under 3 pounds), per pound	20
Sirloin roast, per pound	21
Rump roast, per pound	21
Porterhouse roast, per pound	21
Steak, Chuck, per pound	14
Round, per pound	15
Rib, per pound	20
Sirloin, per pound	21
Porterhouse, per pound	21
Rump, per pound	21
Tenderloin, per pound	24

MISCELLANEOUS.

Livers—Beef, per pound	10
Calf, each	60
Half, each	30
Sausage—Pork, per pound	17
Bologna, per pound	*12
Frankfurter, per pound	14
Leberwurst, per pound	*13
Sweet bread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	†39
½ dozen only	†25
Bluefish, fresh, per pound	16
Cod, fresh, per pound	10
Halibut, fresh, per pound	15
Oysters, in 1-qt. kegs, keg	50

POULTRY AND GAME.

Chickens—Fancy roasting, large, each	1.50
medium, each	1.30
Fowls, each	70, 82, 93, 1.04, 1 15
Ducks, large, each	1 50
medium, each	1 30
Broilers, each	75
Turkeys, per pound	30
Squabs, each	35
Capons, each	†2.60
Geese, fatted, each	†2.75
Pheasants, each	70, 1.00
Partridges, each	50
Grouse, each	85

CURED AND PICKLED MEATS.

	Price.
Ham—English York Cut, per pound	30
German, Westphalia, per pound	36
Sugar cured, per pound	*20
Sliced, per pound	*23
Half, for boiling, per pound	*21
Boiled, per pound	*25
Hocks, per pound	‡08
Bacon—Breakfast, whole piece, per pound	27
Breakfast, sliced, per pound	28
Beef, salt, family, per pound	*9½
Pork, salt, family, per pound	*14
Ox tongues, each	80
Pigs' feet, per pound	10
Tongues, per pound	16
Mutton, mess, per pound	7

DAIRY PRODUCTS.

Butter—Creamery special, per pound	40
Cheese—Roquefort, per pound	38
Philadelphia Cream, cake	10
Young America, per pound	22
Swiss, per pound	26
Edam, each	1.00
Camembert, in large tins, tin	38
Camembert, in small tins, tin	14
Neufchatel, each	6
Gouda, per pound	34
Parmesan, per pound	35
Milk, Briarcliff, bottle	**25
Buttermilk, bottle	**15
Fer-mil-lac, bottle	10
Ice cream, quart	‡25
Ice cream, ½-gallon	‡50

VEGETABLES AND FRUITS.

Beets, per pound	3
Celery, per head	6
Carrots, per pound	*3
Cabbage, per pound	3
Cucumbers, per pound	†10
Cauliflower, per pound	10
Lettuce, per head	5, 7, 10
Onions, per pound	3
Potatoes, white, per pound	*3
Sweet, per pound	2½
Squash, per pound	4
Turnips, per pound	3
Yams, per pound	3½
Apples, per pound	5
Cranberries, per pound	10
Grapefruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12

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*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle:

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal and Colon during the week ending December 3 1910:

Prinz August Wilhelm, November 27, from New York, with 181 cases fuzes for stock.

Allianca, November 28, from New York, with 10 cases electrical material, 17 cases electrical machinery, 25 barrels insulators for Atlantic Division; 23 barrels bolts, 141 pieces knuckles, 329 pieces couplers for Mechanical Division; 25 packages drugs and sundries for Sanitary Department; 10 cases locks, 50 bundles iron, 14 cases railroad torpedoes, 21 barrels coal facing, 200 cases washing powder, 2 school wagons, 120 bundles plain wire, 45 rolls wire cloth, 11 cases steel shafting for stock; and a miscellaneous cargo, the whole consisting of 1,192 packages, weighing 164 tons.

Atenas, December 1, from New Orleans, with 171,758 feet yellow pine lumber for Atlantic Division; 7,076 feet white oak lumber for Mechanical Division; 7,887 feet white oak lumber for Pacific Division; 41,802 feet white oak lumber, 364 bales straw, 18 bundles bed springs for stock.

Santa Marta, December 1, from New York, with 2,240 pieces steel bars, 34 tons lock construction material for Atlantic Division; 91 tons lock construction material for Pacific Division; 15 cases belt dressing, 30 cases tape fuse, 19 pieces steel bars for stock.

Ella, December 2, from Gulfport, with 32,914 feet yellow pine lumber, 122 pieces piling for Atlantic Division; 40,792 pieces yellow pine lumber for Mechanical Division; 844,136 feet yellow pine lumber, 800 pieces cast iron pipe for stock.

Misdirected Letters.

Ancon, C. Z., December 7, 1910.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received in the office of the Director of Posts and may be secured upon request of the addressee:

Atwater, Mrs. William
Benson, Maynard
Bowers, Joe
Butler, James
Farrell, W. H.
Fay, Joe F.
Gahans, Karl
Gammell, Edgar F.
Jacob, J. E.
Jamieson, Mrs. D. H.
Jonah, Gilbert de
Jurado, Luis
Knox, Rolland
Lockerson, Albert
Maher, Philip (2)
Markley, G.
Marshall, Joseph
Neff, John R.
Nichols, Harry
O'Connell, John
Palmer, George W. A.
Parent, J. G.
Pederson, Hand C.
Plummer, D. A.
Porter, E. C.
Potter, Hubert L.
Rath, Mrs. T. J.
Reid, Robert
Ruffo, Dr. J. B.
Russell, Mrs. J. D.
Schoensiegel, Frank
Seelye, Mrs. H. H.
Simmons, Miss Bessie
Surles, J. C.
Talbut, Miss Grace
Watson, Mrs. Lulu M.
Wells, Mrs. George
Wilkins, John
Williams, L. E.
Yahns, Karl (2)

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Advance	P. R. R.	Saturday	Dec. 3
Panama	P. R. R.	Saturday	Dec. 10
Allianca	P. R. R.	Friday	Dec. 16
Colon	P. R. R.	Thursday	Dec. 22
Advance	P. R. R.	Thursday	Dec. 29
Panama	P. R. R.	Wednesday	Jan. 4
Allianca	P. R. R.	Tuesday	Jan. 10
Colon	P. R. R.	Monday	Jan. 16

CRISTOBAL TO NEW YORK.

Colon	P. R. R.	Saturday	Dec. 10
Advance	P. R. R.	Friday	Dec. 16
Panama	P. R. R.	Thursday	Dec. 22
Allianca	P. R. R.	Wednesday	Dec. 28
Colon	P. R. R.	Tuesday	Jan. 3
Advance	P. R. R.	Tuesday	Jan. 10
Panama	P. R. R.	Monday	Jan. 16
Allianca	P. R. R.	Monday	Jan. 23

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 4th and 25th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Metapan	U. F. C.	Thursday	Dec. 1
Prinz Joachim	H.-A.	Saturday	Dec. 3
Zacapa	U. F. C.	Thursday	Dec. 8
Thames	R.-M	Saturday	Dec. 10
Sibiria	H.-A.	Saturday	Dec. 10
Almirante	U. F. C.	Thursday	Dec. 15
Santa Marta	U. F. C.	Thursday	Dec. 22
Tagus	R.-M	Saturday	Dec. 24
Metapan	U. F. C.	Thursday	Dec. 29
Zacapa	U. F. C.	Thursday	Jan. 5
Oruba	R.-M	Saturday	Jan. 7
Almirante	U. F. C.	Thursday	Jan. 12
Santa Marta	U. F. C.	Thursday	Jan. 19
Magdalena	R.-M	Saturday	Jan. 21

COLON TO NEW YORK.

Santa Marta	U. F. C.	Thursday	Dec. 8
Tagus	R.-M	Monday	Dec. 12
Sarnia	H.-A.	Tuesday	Dec. 13
Metapan	U. F. C.	Thursday	Dec. 15
Prinz Joachim	H.-A.	Tuesday	Dec. 20
Zacapa	U. F. C.	Thursday	Dec. 22
Oruba	R.-M	Monday	Dec. 26
Almirante	U. F. C.	Saturday	Dec. 29
Santa Marta	U. F. C.	Thursday	Jan. 5
Magdalena	R.-M	Monday	Jan. 9
Metapan	U. F. C.	Thursday	Jan. 12
Zacapa	U. F C.	Thursday	Jan. 19

NEW ORLEANS TO COLON.

Turrialba	U. F. C.	Saturday	Dec. 3
Cartago	U. F. C.	Wednesday	Dec. 7
Abangarez	U. F. C.	Saturday	Dec. 10
Parismina	U. F. C.	Wednesday	Dec. 14
Atenas	U. F. C.	Saturday	Dec. 17
Heredia	U. F. C.	Wednesday	Dec. 21
Turrialba	U. F. C.	Saturday	Dec. 24
Cartago	U. F. C.	Wednesday	Dec. 28

COLON TO NEW ORLEANS.

Atenas	U. F. C.	Thursday	Dec. 8
Heredia	U. F. C.	Thursday	Dec. 8
Turrialba	U. F. C.	Thursday	Dec. 15
Cartago	U. F. C.	Thursday	Dec. 15
Parismina	U. F. C.	Thursday	Dec. 22
Abangarez	U. F. C.	Thursday	Dec. 22
Heredia	U. F. C.	Thursday	Dec. 29
Atenas	U. F. C.	Thursday	Dec. 29

COLON TO BARBADOS, CALLING AT TRINIDAD.

Thames	R.-M	Tuesday	Dec. 20
Tagus	R.-M	Tuesday	Jan. 3
Oruba	R.-M	Tuesday	Jan. 17

The next sailing of the Leyland Line will be as follows: *Mercian*, on or about December 17, for New Orleans, via Kingston, Ja.

Hamburg-American steamers leave for New York every Tuesday at 10 a. m., arriving there the following Tuesday, and for Port Limon every Tuesday or Wednesday via Bocas del Toro or Puerto Colombia.

Royal Mail steamers leave for New York on alternate Mondays at 5 p. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursday at 3 p. m.; for New Orleans via Port Limon and Puerto Barrios on Thursday at 6 p. m., and for New York on Thursday at 11 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3rd and 20th of each month.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, DECEMBER 14, 1910. No. 16.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Filter Plant at Gatun.

The detailed construction drawings for the sedimentation basin, filter plant and clear water well, which has been authorized for installation in connection with the new Agua Clara water works, are nearly completed, and requisitions for controllers, valves, pipes and other operating parts will go forward in the near future.

The filters are to be what is known as the "Rapid gravity" type, and are designed to deliver a daily output of 2,500,000 gallons of filtered water when three of the four beds are in service. Each of the four beds will be approximately 17 feet square, giving a rate of filtration equivalent to 100,000,000 gallons per 24 hours per acre. The coagulation basin will be about 75 feet square, divided into four compartments, and of such capacity as will give sedimentation of about three hours' duration.

The filtered water will pass by gravity from the controllers through the filters to a covered clear water well having a capacity of about 225,000 gallons. From this well the water will be pumped by the new electrical pump recently installed, to a 400,000-gallon storage tank at Gatun.

Canal Work in November.

The grand total of Canal excavation in November was 3,006,037 cubic yards, which is the greatest excavation for this month since the beginning of the Canal work. A comparison with previous years since the work was fully developed, follows:

YEAR.	Cubic Yards.	Mean rainfall.
1910	3,006,037	14.83
1909	2,458,152	28.50
1908	2,920,494	11.66
1907	1,838,486	10.73

Of the grand total in November, 2,659,046 cubic yards were charged to "work excavation," and 346,991 cubic yards to "plant" excavation. The dry excavation amounted to 1,605,182 cubic yards and was principally by steam shovels. The dredges removed 1,348,611 cubic yards in addition to the amount pumped into Gatun Dam by suction dredges, and the sluicing plants, 52,244 cubic yards. The progress on the locks at Gatun, Pedro Miguel and Miraflores is referred to elsewhere in this issue.

In the Atlantic Division, the total excavation was 909,070 cubic yards, the greatest amount of record for November. Of this total, 119,510 cubic yards were "dry" excavation, and the remainder was removed by dredges in the Atlantic entrance.

The total excavation in the Central Division—1,470,436 cubic yards, likewise established a new record in that division.

In the Pacific Division, the total excavation was 626,531 cubic yards, 559,051 cubic yards of which were taken out by the dredges at the Pacific entrance, and 47,444 cubic yards by the sluicing plant at Miraflores Locks.

A detailed statement of the excavation, and a summary of the work on the locks and dams, follow:

ATLANTIC DIVISION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation
Dry excavation—	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*
Locks, Dam and Spillway	94,552	24,958	119,510
Mindi	....	....	....
Total	94,552	24,958	119,510
Wet excavation—			
Atlantic entrance	600,708	188,852	789,560
Locks, Dam and Spillway	....	....	....
Total	600,708	188,852	789,560
Total wet and dry excavation	695,260	213,810	909,070

CENTRAL DIVISION.

Dry excavation—			
Culebra Cut	1,209,554	....	1,209,554
Chagres section	256,082	....	256,082
Wet excavation—			
Chagres section	4,800	....	4,800
Total	1,470,436	....	1,470,436

PACIFIC DIVISION.

Dry excavation—			
Locks, Dams and Spillways	20,036	....	20,036
Diversions	....	....	....
Prism, south of Pedro Miguel Locks	....	....	....
Total	20,036	....	20,036
Wet excavation—			
Pacific entrance	425,870	133,181	559,051
Miraflores Locks	47,444	....	47,444
Diversions	....	....	....
Total	473,314	133,181	606,495
Total wet and dry excavation	493,350	133,181	626,531

TOTAL CANAL EXCAVATION.

Dry excavation	1,580,224	24,958	1,605,182
Wet excavation	1,078,822	322,033	1,400,855
Total	2,659,046	346,991	3,006,037

Mean rainfall along Canal (twelve stations) 14.83 inches.

By "Work" Excavation is meant excavation actually made for one of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc.; that is, it represents material taken from the area to be occupied by the Canal, and constitutes excavation useful for the completed Canal.

By "Plant" Excavation is meant excavation outside of any of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc. It includes material necessary to be excavated for construction purposes only and is chargeable against the particular plant item for which it is performed, such as Prism, Diversions, Locks, etc.

DAM AND LOCK CONSTRUCTION.

MATERIAL.	Atlantic.	Pacific.	Total.
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*
Fill placed in dams	395,771	56,404	452,175
Concrete laid in locks	75,152	88,119	163,271
Concrete laid in dams and spillways	5,651	....	5,651

Excavation Record in Culebra Cut.

The excavation from Culebra Cut in November amounted to 1,209,554 cubic yards and was the greatest record in that section for the month of November, as the following comparison will show:

NOVEMBER.	Cubic Yards.	Rainfall.
1910	1,209,554	8.85
1909	1,070,792	20.99
1908	1,022,576	4.46
1907	790,632	10.40

Mooring Buoys at Pacific Entrance.

In view of the changes that are to be made in the Balboa docks and the consequent curtailment of berthing facilities at that point, two mooring buoys and six mushroom anchors will be put down at the Pacific entrance to the Canal, on the right side close to the bank, so that ships can be brought in to load from or discharge into lighters, as the case may be. These buoys will also be of assistance in coaling war vessels. In addition to reducing the cost of towing, it is believed they will eliminate the possibility of lighters sinking during heavy weather in the harbor. The work will be done by the Pacific Division, and its cost will be borne by the Panama Railroad Company.

Panama Railroad Relocation from Gamboa to Pedro Miguel.

A survey for the location of the Panama railroad from Gamboa to Pedro Miguel, a distance of about 10 miles, parallel with the Canal, but at sufficient distance east of it to avoid interruption from the sliding of the banks, has been completed, and construction of the new line has been begun.

On July 30, 1908, a report made on data then available recommended the construction of this section of the relocated line on the 45-foot berm on the east side of Culebra Cut at 95 feet above sea level. On July 23, 1910, a committee reporting on present conditions recommended the construction of the line at a distance east of the Canal, in order to avoid interruptions to traffic during the time when the banks of Culebra Cut are assuming their

NOTES OF PROGRESS.

(*Continued.*)

final slope; to provide easier access to the railroad than would be possible if the line was constructed on the berm at elevation 95, which is far below the natural level of the ground throughout Culebra Cut; and to provide easy access to the contemplated bridge over the Culebra Cut at Empire. over which it is assumed a railroad will some day run. This report was published in THE CANAL RECORD of August 3.

The new location involves only two difficult pieces of work—a cut of 250,000 cubic yards at Paraiso, and a large rock cut at Bas Obispo. Between these points the grading is largely alternate cut and fill, and the work will balance. The maximum curve on the new line is 7 per cent, and the maximum grade is 1.25 per cent compensated for curvature. The line on the berm at elevation 95 feet through Culebra Cut will be completed for construction purposes.

Concrete Piling at Gatun Locks.

The south or up stream center guide wall of the Gatun Locks will extend 1,500 feet from the south guard gate into the lake. About 350 feet of the wall nearest the lock will be of solid construction, and the remaining 850 feet will be constructed as a reinforced concrete cellular wall supported by reinforced concrete piles driven to depths from 20 to 70 feet.

About 3,500 piles will be needed in the construction of the foundations. One part of cement, one and one-half parts of sand, and three parts of rock will be used in the construction of the piles, and they will be cast on two platforms about 80 feet wide and 400 feet long, located on the rock storage pile at New Gatun. The piles will be allowed to remain on the storage pile about six weeks before driving.

Two steam pile drivers of the skid type, having a maximum height above the ground of approximately 93 feet, are under construction. They will be equipped with steam hammers weighing over 10,000 pounds, 5,000 pounds of which will be in the driving or striking part of the hammer, which will fall 42 inches and strike 60 blows a minute.

In order that the piling may not be crushed by the impact of the hammer, a cast steel driving head has been designed to fit over the head of the pile. This driving head will contain a cushion of sand and manila rope.

Vacancies on Canal Force.

The steamship companies in the Panama service have been requested to post the following notice in conspicuous places at their offices and wharves in the United States, in order to discourage immigration to the Isthmus of persons in search of work:

EMPLOYMENT ON THE PANAMA CANAL.

There is at present a surplus of skilled and unskilled labor on the Isthmus. To fill occasional vacancies in the organization, for which local applicants with the necessary qualifications cannot be found, the Isthmian Canal Commission maintains an employment bureau in its Washington office, under the direction of Captain F. C. Boggs, General Purchasing Officer. Skilled mechanics, and other persons with special training and experience, can frequently secure appointment by application to him, or to one of the Commission's authorized traveling employment agents.

Persons who may intend to seek employment on the Isthmus will avoid unnecessary expense and disappointment by addressing a written application to the Isthmian Canal Commission, Washington, D. C., and remaining in the the United States until they are tendered an appointment.

Under present conditions there is but little likelihood that any man who goes to the Isthmus at his own expense and on his own initiative will find employment there.

ISTHMIAN CANAL COMMISSION.

Panama Canal Service Medal Association.

The annual meeting of the Panama Canal Service Medal Association will be held in the I. C. C. lodge hall at Gorgona on Sunday, January 8, at 9.30 a. m. There will be an election of officers. All proposed amendments to the by-laws should be forwarded at once to the undersigned. Charter membership will close on December 31, 1910.

E. F. J. GOLDSMITH, *Secretary.*
P. O. Box, No. 41.
Ancon, C. Z., December 9, 1910.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Concrete work in Gatun Locks is about 46 per cent completed, 950,595 cubic yards, out of a total of 2,085,000, having been placed at the close of work on December 10.

A statement of the amount of concrete placed in the locks each day for the week ending December 10, and of the total, follows; and a similar statement for the work in the Spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
December 5	1,780	28:39	6	848	9:40	2	189	2,817
December 6	1,840	32:56	6	960	11:40	2	156¼	2,956¼
December 7	1,856	30:16	6	968	11:40	2	138¾	2,962¾
December 8	1,871	30:09	6	1,098	13:40	2	160½	3,129½
December 9	2,166	36:24	6	974	11:40	2	310¾	3,450¾
December 10	2,250	35:37	6	762	9:40	2	54¼	3,066¼
*Portable mixer				119				119
Total	11,763	194:01	6	5,729	68:00	2	1,009½	18,501½
Previously reported								932,093¾
Grand total								950,595¼

*The 119 yards shown for the portable ⅓-yard mixer were placed on the following days, and are included in the total: December 6th, 24 yards; December 7th, 26 yards; December 8th, 22 yards; December 9th, 20 yards; December 10th, 27 yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is about 54 per cent completed, 450,591 cubic yards, out of a total of 837,400, having been placed at the close of work on Saturday, December 10. Berm crane "E" was not in operation on Friday and Saturday, December 9 and 10. The record of concrete laid during each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
December 5	1,596	22:00	4	284	7:17	2		1,880
December 6	1,116	17:00	4	434	10:33	2		1,550
December 7	760	11:00	4	352	8:00	2	2	1,114
December 8	1,380	10:00	4	126	5:00	1		1,506
December 9	1,040	7:00	2	631	14:00	3	18	1,689
December 10	1,038	7:00	2	678	16:50	3	29	1,745
Total	6,930	74:00	3.33	2,505	61:00	2.17	49	9,484
Previously reported							3,795	441,107
Grand total							3,844	450,591

MIRAFLORES LOCKS.

The record of concrete placed in the upper lock at Miraflores during the six 8-hour working days of the week ending December 10, follows:

DATE.	AUXILIARY PLANT.										Total.
	2-cubic yard mixers.			⅓-cubic yard mixers.			⅓-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers.	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
Dec. 5	400	7:00	2	365	25:25	3	95	6:00	1	25	885
Dec. 6	440	7:50	2	262	18:50	4	98	6.75	1	23	823
Dec. 7	404	7.50	2	276	19:50	4	51	4:00	1	15	746
Dec. 8	270	4:50	2	445	29:50	4	68	7:00	1	51	*844
Dec. 9	380	4:50	2	356	25:25	4	89	8:00	1	24	849
Dec. 10	448	8:00	2	288	23:75	4	87	7:00	1	10	833
Total	2,342	39:00	2	1,992	141:75	3.83	488	38:75	1	148	4,980
Previously reported										1,975	77,886
Grand total										2,123	82,866

*Includes 10 cubic yards mixed by hand.

STEAM SHOVEL RECORDS.

Work of Central Division Shovels in November.

During the month of November, the total amount of material excavated in the Central Division was 1,470,436 cubic yards, of which 417,359 cubic yards were classified as earth, and 1,053,077 cubic yards as rock. Of this quantity, 1,444,567 cubic yards were removed by steam shovels; 21,069 cubic yards were blasted and washed away, and 4,800 cubic yards were sluiced by contract.

The high record for the month was made by shovel No. 221, working 24 days in the Empire district, which excavated 45,720 cubic yards of rock. The second best record of the month was made by shovel No. 228, working 24 days in the Empire district, which excavated 43,824 cubic yards of rock.

The best record for a shovel of the 70-ton class was made by shovel No. 111, working 24 days in the Chagres district, which excavated 30,756 cubic yards of earth.

Shovel No. 204, working in the Culebra district, made a high record for one day by excavating 2,603 cubic yards of rock and earth on November 11.

Shovel No. 128, working in the Chagres district, excavated 1,980 cubic yards of earth on November 17, and this is the high record for one day for shovels of the 70-ton class, during the month.

Except where noted, monthly reports are computed by place measurement, while the daily reports are based on car measurement. The best records for the month and for one day are shown below:

BEST RECORDS FOR THE MONTH.

CHAGRES DISTRICT.

SHOVEL No.	CUBIC YARDS.			
	Earth.	Rock.	Total.	No. of days at work.
126	37,155	....	37,155	24
111	30,756	....	30,756	24
EMPIRE DISTRICT.				
221	....	45,720	45,720	24
228	....	43,824	43,824	24
CULEBRA DISTRICT.				
213	....	40,154	40,154	24
212	19,503	19,504	39,007	24
PEDRO MIGUEL.				
231	28,146	9,382	37,528	24

BEST RECORDS FOR ONE DAY.

Shovel.	Location.	Date.	Character of material excavated.	Cubic yards.
128	Chagres	Nov. 17	Earth	1,980
132	Chagres	Nov. 19	Earth	1,770
126	Chagres	Nov. 21	Earth	1,764
224	Empire	Nov. 17	Rock	2,366
218	Empire	Nov. 29	Rock	2,325
264	Empire	Nov. 18	Rock	2,277
204	Culebra	Nov. 11	Rock and earth	2,603
217	Culebra	Nov. 2	Rock and earth	2,584
204	Culebra	Nov. 10	Rock and earth	2,527
256	Culebra	Nov. 30	Rock and earth	2,527
231	Pedro Miguel.	Nov. 10	Rock	1,900
231	Pedro Miguel.	Nov. 11	Rock	1,900
231	Pedro Miguel.	Nov. 18	Rock	1,900

Mechanical Draftsman Examination.

In connection with the announcement published two weeks ago of an examination for mechanical draftsman, Isthmian Canal Service, information has been received that a separate register will be established for eligibles who have had sufficient experience in marine work to qualify them for the position of mechanical draftsman with marine experience, the entrance salary of which position will be $125 per month. This position is in addition to those mentioned in the announcement as first published.

Applications will be received up to the close of business on December 17. Form 1312 should be requested from the undersigned, and filed complete, with medical certificate. Those whose applications might be received too late should telephone to this office that they wish to apply for the above examination.

JOHN K. BAXTER,
Secretary, Isthmian Civil Service Board.

Culebra, C. Z., December 10, 1910.

Strangers' Club Election.

At a meeting of the members of the Strangers' Club held on Monday evening, December 5, officers were elected for the ensuing year, as follows: Chairman, Maj. Eugene T. Wilson; vice-chairman, R. H. Wardlaw; secretary, Robert Beverly; treasurer, J. B. Williams; governing committee, H. O. Chalkley, Surgeon William H. Bell, R. G. Castel, J. M. Hyatt, Lieut. Frederick Mears, Robert Wilcox.

Culebra Colored Association.

In November, 1909, an institute for negroes in the Canal service was opened at Culebra in a building set apart for that purpose. It was equipped with writing tables, game tables and games, such as dominoes, checkers and chess, supplied with newspapers from the West Indies, magazines and other periodicals, and in April, a billiard table was added. The playing of cards, dancing, and the use of liquor and profane language in the building were forbidden. The conduct of the institute was placed under the Rev. S. Moss Loveridge, one of the Commission chaplains whose work has been largely among the West Indian negroes. In the first month 33 men joined the institute, and in October, 1910, the twelfth month, two joined. The total number that ever joined was 58, about two per cent of the available male colored people in the vicinity. At present there are seven men on the rolls. The membership fees were 50 cents for one month; $1 for three months; $1.50 for six months, and $2.50 for twelve months. The total receipts from all sources, and the disbursements, have been as follows:

RECEIPTS.

Membership tickets	$67.50
Social and concerts	18.50
Billiard table receipts	91.75
Donations	58.00
Church outing (donated)	38.55
Proceeds of entertainments in four churches	36.77
Portion of steward's salary paid by church	250.00
Total receipts	$561.07

DISBURSEMENTS.

Subscriptions to newspapers	$16.90
Table games	11.73
Printing and stationery	52.42
Decorations	9.00
Billiard table	146.87
Refreshments (social)	2.70
Ice	25.32
Sundries	5.39
Salary of steward at $50 per month	600.00
Total disbursements	$870.33
Balance due	$309.26

On November 1, 1910, the Rev. Mr. Loveridge recommended that the institute be closed and his recommendation was approved. A few days later, the Rev. H. A. Brown, chaplain of the Engineer Corps, U. S. A., in charge of the Episcopal churches at Culebra and Empire, asked for, and was given authority to reopen the building for the benefit of the Culebra Colored Association, composed of men and women. Beginning November 24, the building has been opened every night from 7.30 to 11 o'clock. Twice a week informal dances are held, and it is proposed to hold a formal dance once a month. A new billiard table has been ordered. Alterations will be made in the interior of the building, so that the rooms formerly occupied by the janitor will be used as a retiring room, and for serving ice cream. Only members will be served, and only coupons issued to them will be accepted in payment for ice cream. There are now 60 members. The entrance fee for men is $1, and the membership dues 50 cents a month. There is no entrance fee for women, but they pay a monthly due of 25 cents.

Ancon Quarry Plant.

Beginning December 1, a 12-hour working day, divided into 8-hour shifts, was placed in effect at the Ancon quarry plant. This was done to increase the production of crushed rock, the consumption of which has grown with the concrete operations in the locks at Pedro Miguel and Miraflores. An additional dust screen of small mesh has recently been installed and the crushed rock is now cleaned of all dirt and fine particles. The screenings fall into a bin built for the purpose and are afterwards hauled away to be used as a top dressing on Canal Zone roads, or disposed of by sale to private users. Private sales are made on the basis of 50 cents, United States currency, per cubic yard, f. o. b. cars at the quarry.

A statement of the rock crushed at Ancon quarry during the week ending December 3, follows:

DATE	Hours worked.	Cubic Yards.
November 28	6:10	2,295
November 29	8:20	2,835
November 30	5:40	1,695
December 1	10:55	3,675
December 2	11:20	4,290
December 3	8:40	3,090
Total	51:05	17,880

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the weeks ending December 3 and 10, follows:

DATE.	Hours. worked.	Cubic Yards.
November 28	6:29	2,317
November 29	9:14	2,887
November 30	9:43	2,600
December 1	10:36	2,955
December 2	11:15	3,453
December 3	1:47	600
Total	49:04	14,812
December 5	11:50	2,070
December 6	11:19	2,481
December 7	11:38	2,946
December 8	7:16	3,272
December 9	6:48	3,014
December 10	10:52	3,741
Total	59:43	17,524

Notice to Steam Shovel Men and Dredge Men.

Local No. 19, I. B. of S. S. and D. M. will hold its monthly meeting on Sunday, December 18, at the I. C. C. lodge hall at Empire, at 12.15 p. m. It is important that all brotherhood men attend this meeting.

WALTER P. TUDOR,
Secretary-Treasurer.

Empire, C. Z., December 12, 1910.

RECORD OF CANAL WORK SINCE AMERICAN OCCUPATION.

MONTHLY TOTALS BY CUBIC YARDS OF EXCAVATION AND LOCK AND DAM CONSTRUCTION.

[*All figures are of work useful for the completed Canal.*]

DRY EXCAVATION.

CENTRAL DIVISION.

Months.	Culebra Section.*							Chagres Section.**			
	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1907.	1908.	1909.	1910.
January	....	70,650	120,990	566,750	1,227,022	1,150,249	1,323,693	....	169,447	389,399	175,802
February	....	75,200	168,410	639,112	1,248,265	1,194,454	1,259,173	....	200,145	450,182	286,309
March	....	132,840	239,178	815,270	1,290,885	1,434,597	1,509,728	....	324,233	619,491	484,846
April	....	126,749	213,177	879,527	1.242,574	1,272,746	1,288,845	....	329,483	510,020	428,777
May	27,556	75,935	196,209	690,365	960,840	1,126,963	1,099,279	....	235,902	386,170	248,974
June	32,551	76,905	212,623	624,586	1,134,032	1,242,134	1,305,141	....	322,145	275,900	164,389
July	31,599	78,570	159,789	770,570	1,121.325	1,200,828	1,153,810	....	345,757	233,897	166,106
August	35,056	49,210	244,823	786,866	1,171,927	1,173,370	1,377,714	2,900	368,683	231,543	234,404
September	25,220	44,085	291,452	753,468	1,122,860	1,235,978	1,339,948	21,546	346,948	235,818	234,290
October	19,695	52,940	327,009	834,499	1,160,101	1,302,901	1,320,314	25,627	424,911	221,409	271,409
November	28,860	60,540	221,642	790,632	1,022,576	1,070,792	1,209,554	44,044	336,390	93,619	260,882
December	42,935	70,630	307,689	1,025,485	1,210,046	1,152,022	....	98,652	383,948	105,044	....
Totals	243,472	914,254	2,702,991	9,177,130	13,912 453	14.557,034	14,187,199	192,769	3,787,992	3,752,492	2,956,881

Months.	Atlantic Division.					Pacific Division.					
	Colon (Mindi)†		Gatun Locks, Dam and Spillway.††			Pedro Miguel Locks.‡			Miraflores Locks, Dams And Spillway.‡‡		
	1909.	1910.	1908.	1909.	1910.	1908.	1909.	1910.	1908.	1909.	1910.
January	45,664	....	292,155	102,690	125,011	....	83,726	27,320	7,203	61,202	31,479
February	46,046	....	282,797	95.031	123,738	....	58,242	9,486	39,046	53,689	15,300
March	70,713	....	374,598	90,051	132,007	....	95,624	6,784	73,194	51,417	18,184
April	74,368	....	373,456	70,009	103,243	....	101,365	9,129	98,943	60,060	12,148
May	71,407	....	266,747	52,786	82,958	....	57,523	10,405	73,023	47,588	20.250
June	80,101	....	244,951	36,556	88 088	13,228	70,971	8,420	68,691	55,653	21,994
July	82,378	....	213,359	39,058	95,503	22,648	77,503	4,410	104,369	50,999	11,990
August	66.249	....	188,262	40,346	99,737	22,217	58,025	12,789	94,248	35,446	17,548
September	61,437	....	145,990	49,945	103,040	28,833	48,825	10,405	90,923	31,803	8,590
October	72,643	....	154,064	57,321	118,327	48,875	39,002	7,433	74,700	25,349	9,850
November	42,009	....	118,278	63,452	94,552	55,401	20,207	10.636	52,930	18,644	9.400
December	....	....	119,904	96,590	....	65,578	28,342	....	69,650	20,083	....
Totals	713,015	....	2,774,561	793,835	1,166,204	256,780	739,355	117,217	846,920	511,933	176,733

*Total to December 1, 1910, 55,694,533 cubic yards.

**Total to December 1, 1910, 10,689,441 cubic yards.

†Total to December 1, 1910, 1,476,821 cubic yards; in this total are included 172,851 cubic yards removed in 1907, and 590,955 cubic yards removed in 1908.

††Total to December 1, 1910, 6,101,407 cubic yards; in this total are included 26,628 cubic yards excavated October to December, 1906, and 1,340,179 cubic yards in 1907; there were also 38,425 cubic yards removed by dredges at Gatun Dam site in 1907.

‡Total to December 1, 1910, 1,113,352 cubic yards.

‡‡Total to December 1, 1910, 1,535,586 cubic yards; there were also 78,233 cubic yards excavated at Balboa locks and dams in 1907; and 239,891 cubic yards at different points in prism to December 1, 1910.

WET EXCAVATION.

Months.	Atlantic Division.						Pacific Division.						
	Atlantic Entrance.§				Gatun Locks		Pacific Entrance.§§						Miraflores Locks.§§§
	1907.	1908.	1909.	1910.	1908.	1909.	1905.	1906.	1907.	1908.	1909.	1910.	1910.
January	111,100	490,701	521,050	510,055	....	97,043	....	95,940	94,710	460,250	469,529	518,936	....
February	110,002	427,722	444.910	493,448	....	132,291	....	95,940	93,480	663,519	671,477	285,791	....
March	84,145	546,886	461,208	412,325	....	141,838	....	116,820	92,319	783,281	865,696	462,588	....
April	69,889	496,366	470,635	190,574	....	17,938	....	110,700	104,855	676,539	731,767	534,322	....
May	133,847	564,386	315,370	447,578	....	52,011	....	112,340	122,157	530,466	720,753	484,509	....
June	124,118	572,749	182,575	458,021	....	38,829	50,676	62,697	133,575	656,621	844,685	475,486	....
July	109,922	625,497	348,451	423,092	....	....	41,533	98,400	108,338	696,170	733,181	515,782	....
August	194,297	638,217	422,846	508,829	....	....	54,530	111,930	168,284	737,774	623,263	506,969	....
September	403,842	624,776	410,574	451,873	....	....	114,308	105,780	153,975	750,080	662,976	473,585	....
October	415,120	505,260	314,778	549,788	....	....	81,836	97,170	357,122	762,276	720,920	467,873	40,000
November	422,797	570,832	457,889	600,708	....	....	71,176	92,988	365,423	609,089	627,791	425,870	47,444
December	442,835	679,604	489,121	....	8,583	....	71,094	90,528	349.551	729,960	727,460	....	....
Totals	2,621,914	6,742,996	4,839,407	5,046,291	8,583	479,950	485,153	1,191,233	2,143,789	8,056,025	8,399.498	5,151,711	87,444

§Total to December 1, 1910, 20,678,073 cubic yards; in this total are included 399,820 cubic yards excavated in 1905, and 1,027,645 cubic yards in 1906.

§§Total to December 1, 1910, 25,427,409 cubic yards; there were also 172 cubic yards removed by steam shovels during October, 1908.

§§§Total to December 1, 1910, 397,091 cubic yards.

CONCRETE IN LOCKS AND DAMS.

Months.	Gatun Locks.			Pedro Miguel Locks.			Miraflores Locks.	
	1909.	1910.	1911.	1909.	1910.	1911.	1909.	1910.
January	......	54,136	....	....	16,273	....	....	....
February	......	55.696	....	....	13,218	....	....	146
March	....	60,998	....	....	18,793	....	....	314
April	....	63,227	....	....	24,522	....	....	13
May	....	74,273	....	....	29,576	....	....	27
June	....	89,391	....	....	30.631	....	....	1,603
July	....	84,001	....	....	41.464	....	28	3 672
August	1,298	85,696	....	....	51.264	....	74	6,030
Sept	12,294	76,721	....	2,370	50,702	....	....	18,133
October	29,378	86,949	....	8.310	61.422	....	....	22,159
Nov'mber	30,270	75,152	....	10,169	64,248	....	....	23,871
December	42,832	....	....	13,007	....	....	....	....
Total	116,072	806,240	....	33,856	402,113	....	102	75.968

From March 17, 1909, to December 1, 1910, there were placed in the Spillway of Gatun Dam 108,272 cubic yards of concrete, including 5,651 cubic yards placed in November, 1910; in Miraflores Dam there were placed 321 cubic yards up to December 1, 1910.

FILL PLACED IN DAMS.

Months.	Gatun.*		Pedro Miguel.†	Miraflores.‡	
	1910.		1910.	1910.	
	Wet.	Dry.	Dry.	Wet.	Dry.
January	178,254	236.994	....	....	28,151
February	292.215	271.788	11.510	....	1,438
March	210,387	332,661	22,860	....	5,385
April	242,440	263.437	31.394	....	....
May	249,283	204,275	23.572	....	6,480
June	384,166	271,283	1,350	....	7,356
July	462,092	187,713	....	....	4,290
August	406,606	235,010	....	....	10,898
September	457,637	228,638	....	....	11,220
October	480,732	259,619	....	40,000	14,370
November	129,666	266,105	....	47,444	8,960
December	....	....	....	....	....
Total	3,493,478	2,757,523	90,686	87.444	98,548

*Dry fill begun in January, 1907, and 2,096,477 cubic yards of wet, and 3,241,418 cubic yards of dry fill were placed in 1907, 1908 and 1909.

†170,166 cubic yards placed in dams up to December, 1909, inclusive.

‡138,587 cubic yards of wet fill and 472,091 cubic yards of dry fill were placed in dams up to December, 1909.

CANAL EXCAVATION TO DATE.

By French Companies		78,146,960
French excavation useful to present Canal		29,908,000
By Americans—		
Dry excavation	76,924,636	
Dredges	47.034,331	
Total		123,958,967
May 4 to December 31, 1904	243,472	
January 1 to December 31, 1905	1,799,227	
January 1 to December 31, 1906	4,948,497	
January 1 to December 31, 1907	15,765,290	
January 1 to December 31, 1908	37,116,735	
January 1 to December 31, 1909	35,096,166	
January 1 to November 30, 1910	28,989,580	

TOTALS BY DIVISIONS AND AMOUNT TO BE EXCAVATED.

Divisions.	Amount excavated.		Remaining to be Excavated.	
Atlantic—				
Dry excavation	7,578,228	28,783,259	694,826	14,574,086
Dredges	21,205.031		13,879,260	
Central—				
Culebra Cut	55,694.533	66.383,974	28,492,191	30,741,044
All other points	10.689,441		2,248,853	
Pacific—				
Dry excavation	2,967,234	28,791,734	3,412,908	13,263 669
Dredges	25,824,500		9,850,761	
Grand totals		123,958,967		58,578,799

LOCK VALVE MACHINERY.

Bids to Be Advertised for, both in the United States and in Europe.

The Washington office has been directed to advertise for bids for the machinery to operate the Stoney gate valves and cylindrical valves in the locks at Gatun, Pedro Miguel and Miraflores. Bids on this machinery will be requested, both in Europe and in the United States. There will be required 116 machines, motors, and limit switches for operating the Stoney gate valves, and 120 machines, motors, and limit switches for operating the cylindrical valves. Tests of the type of valves to be used are being made at Gatun and Pedro Miguel.

The Stoney gate valves will be used for letting the water into and out of the lock culverts or tunnels. The machinery for which bids are to be asked will operate a rising valve stem fastened to the gate valve at the lower end and to a guided crosshead at the upper end. The crosshead will move vertically through a distance of 18 feet by means of two vertical revolving screws which transmit the pull through two nonrevolving nuts in the crosshead. Each screw will be driven from the motor shaft by a gear and pinion reduction and two bevel gears.

The 78-inch cylindrical valves will let the water from the main culvert of the center wall of the locks into the lateral culverts, or *vice versa.* The machinery for operating them will consist of a guided rising stem fastened at its lower end to the cylindrical valve and having a nonrevolving nut fastened to its upper end. This nut, and hence, the valve and valve stem, is moved vertically through a distance of three feet by means of a revolving screw, the end thrust being taken up by a roller-bearing at the upper end of the screw. The screw is actuated by a bevel gear which is driven by a pinion on the motor shaft.

The motors for operating the machinery will be induction, totally inclosed, moisture-proof, squirrel cage form, mill type, high torque, designed for 25-cycle, 220-volt system. It is the desire of the Commission to purchase motors which have been developed and successfully used in the operation of steel rolling mills for a period of at least one year, such service being comparable with that which will be required on the lock valves. The service for which they will be used will be intermittent, and the excessive moisture of the Canal Zone, with its deteriorating effect, must be guarded against. Tests will be made on the Isthmus to ascertain whether the motors furnished are fit to stand the effects of the moisture, and to this end the Commission may buy a sample of any, or all, of the motors offered.

All of the above apparatus will be installed by the Commission, and the time of delivery extends over a period of about two years, in order that the material may be on hand when the completion of successive parts of the concrete will permit its erection.

Arrested for Embezzlement.

Henry J. Hines, an American employed by the Pacific Division at Balboa, was placed under arrest on Wednesday, December 7, charged with embezzling United States Government property, consisting of commissary stores consigned to his charge and destined for the use of the Pacific Division floating equipment. He waived examination before Judge Blackburn in the District Court at Ancon, and on Monday, December 11, was arraigned before Judge Gudger in the Circuit Court of the First Judicial District, where he pleaded "Not guilty" and was placed under bond of $4,000 for his appearance for trial on Monday, December 19. Information was filed against him in six cases of embezzlement, one occurring in October, four in November, and one in December. Charles Silvers and F. P. Petersen, proprietors of the Hotel Metropole in Panama, have been extradited and will be tried in the Canal Zone courts for embezzlement for having received the stolen goods. They were admitted to bail on Tuesday in the sum of $5,000 each. Two Panamanians, drivers of the wagon in which the goods were hauled from Balboa to the hotel, are also held under bond.

Canal Zone Schools.

The attendance in the Canal Zone public schools during November was as follows:

WHITE.	ATTENDANCE.	
	Enrolled	Average daily.
Ancon	178	164
Pedro Miguel	31	29
Paraiso	28	24
Culebra	91	79
Empire	209	172
Bas Obispo	19	18
Gorgona	109	103
Tabernilla	18	13
Gatun	147	128
Cristobal	148	135
Total	978	865
COLORED.		
Balboa	39	23
Paraiso	39	34
Culebra	139	92
Empire	145	105
Las Cascadas	44	36
Matachin	27	17
Gorgona	43	27
San Pablo	40	32
Tabernilla	43	29
Bohio	37	22
Gatun	76	28
Mount Hope	47	32
Cristobal	132	73
Pleya de Flor	27	15
Cruces	40	30
Total	918	595
Grand total	1,896	1,460

Red Cross Finances.

A statement of the financial condition of the Canal Zone chapter, American National Red Cross, for the month of November, 1910, follows:

RECEIPTS.		
November 1. Balance on hand	$1,895.05	
November 15. Miscellaneous contributions at Paraiso Red Cross meeting	15.00	
November 15. Membership dues paid at Paraiso meeting	54.00	
November 30. Membership dues	6.00	
		$1,970.05
DISBURSEMENTS.		
November 30. Postage, as per receipts	$10.00	
November 30. Isthmian Canal Commission, printing and supplies	11.25	
		$21.25
November 30. Balance on hand		$1,948.80

JOHN L. PHILLIPS, *Treasurer.*

Approved:
C. A. DEVOL, *Chairman.*

Examinations for Rodmen and Levelmen.

The second examination to test the fitness of rodmen and levelmen for promotion will be held in the clubhouse at Culebra, beginning at 9 a. m., on Sunday, January 8, 1911. Rodmen and levelmen who did not enter the first examination; those who entered, but failed to pass; and those appointed since November 6, 1910, will be admitted to this second examination upon written application addressed to the Chairman of the Examining Board, Culebra, C. Z., prior to January 1, 1911.

A. B. NICHOLS,
Chairman, Examining Board.

Culebra, C. Z., December 9, 1910.

Sailing of Cristobal.

The P. R. R. steamship *Cristobal* will sail from Cristobal at 5 p. m., Friday, December 16.

Gatun Dam Spillway.

Concrete was placed in the Spillway of Gatun Dam during the week ending December 10, as follows:

DATE.	CUBIC YARDS.		
	Concrete	Large rock.	Total.
December 5	208	....	208
December 6	212	....	212
December 7	308	....	308
December 8	264	....	264
December 9	220	....	220
December 10	128	....	128
Total	1,340	....	1,340
Previously reported	....	....	109,180
Grand total	....	....	110,520

Minnesota Residents.

Will all residents of the Canal Zone who are now, or who have been, residents of the State of Minnesota kindly communicate with E. Dow Gilman, office of Assistant Chief Engineer, Culebra.

E. DOW GILMAN.

Culebra, C. Z., December 10, 1910.

Resignation of Justice Owen.

Judge Wesley M. Owen, associate justice of the Canal Zone Supreme Court, has tendered his resignation effective at the end of his annual leave in February, when he will have been on the Canal Zone bench two years. He states that his resignation is due to ill health and to the demands of business interests in Illinois.

Central Division Unloaders.

A statement of Lidgerwood cars unloaded in the Central Division during the month of November, follows:

LOCATION.	No. of unloaders.	No. of trains.	No. of cars.
Balboa	3	860	17,200
Miraflores	3	627	12,540
Gamboa	3	763	15,260
Tabernilla	1	290	5,800
Total	10	2,540	50,800

Odd Fellows.

At the annual communication of the sovereign grand lodge of the Independent Order of Odd Fellows held at Atlanta, Ga., recently, B. F. Sisson of Gatun was reappointed district deputy grand sire for the Canal Zone for the fourth consecutive year.

Traffic on the old line of the Panama railroad through the section between Gatun and Frijoles, which was suspended during the freshet of December 2 to 6, was resumed on December 9. The water in the lake rose and subsided so slowly that little damage was done in the inundated section of the railroad. Through Black Swamp the ballast on the southbound track will need renewing.

SOCIAL LIFE OF THE ZONE.

Women's Clubs.

The year book of the Canal Zone Federation of Women's Clubs has been received and is being distributed to the club women, a small charge to cover the cost of printing being made for each copy. The book contains a list of officers and chairmen of standing committees for the year 1910-11. The cover is in green and gold, and is decorated with a design of the Federation pin. It is the first year book that the Federation has issued.

The Cristobal Woman's Club has issued its third year book in the usual form. An innovation has been made in the department meetings, which are held in the clubrooms, instead of at the homes of the chairmen, as formerly. The program for each day is arranged by the department chairmen. An informal reception follows at which two or more club members act as hostesses. At the general meeting of the club on Wednesday, December 7, Dr. E. W. Hill made an address on the education of the child from a medical standpoint. The home department Christmas bazaar, held on Thursday, December 1, was well patronized, especially during the evening. During the afternoon, musical selections were rendered by Miss Beverly, and a feature of the evening was a concert by the Panama railroad orchestra. About $100 was made and the money will be used for civic purposes in Colon and Cristobal. All the articles left over from the bazaar will be placed on sale at the meeting of the home department on Wednesday, December 14.

At the November business meeting of the Gatun Woman's Club, Charles C. Carr, principal of the Canal Zone high school, addressed the women on the importance of establishing a public playground for children in the village of Gatun. The cost of the equipment considered necessary would be about $150. The club has under consideration several suggestions for ways and means of raising this sum, and at the business meeting on the first Friday in January the question will again be discussed with Mr. Carr and others. An election of officers for the next quarter will be held at this meeting. The Woman's Club is cooperating with the other organizations of Gatun in the preparations for the public Christmas celebration to be held in the clubhouse on Christmas Eve. A Christmas cantata will be sung by the children. Committees have been appointed on the different departments of the work, with Mr. Carr as general chairman. A part of the money raised in the village for the entertainment will be devoted to a Christmas celebration for the colored children in the labor camps in New Gatun and the surrounding villages.

The meetings of the Gorgona Woman's Club are held at the homes of the members, instead of at the clubhouse, as formerly. The club is assisting in preparations for the Christmas celebration to be held in the clubhouse on Christmas Eve.

Meetings of the Empire Woman's Club will be resumed after this week. A social meeting of the Pedro Miguel Woman's Club was held at the home of Mrs. William Doyle on Wednesday, December 7, the reception being in honor of the little daughter of the hostess. Refreshments were served.

The Paraiso Woman's Club has arranged a card party and sale of Christmas goods to be held at the lodge hall on Thursday evening, December 15. The next meeting of the club will be held on Wednesday afternoon, December 21.

Episcopal Churches.

The Rt. Rev. Albion W. Knight, the Bishop of Cuba, is expected to arrive on the Isthmus from Havana, on January 4, for an official visit which will extend over 18 days. The Rev. Jesse B. Bicknell of St. Paul's Church, Baltimore, has arrived on the Isthmus to take up duty in connection with the Protestant Episcopal Church Mission.

The Sunday school of St. Luke's Church, Ancon, will hold its Christmas celebration in Ancon hall on Wednesday evening, December 27, at 8 o'clock. There will be a tree and gifts, and carols will be sung. There are about 25 pupils in the school.

The next meeting of the Woman's Altar Guild will be held at Hotel Tivoli on Tuesday, December 21, when Mrs. Harry Payne will be hostess.

Miscellaneous Events.

The Ladies' Aid Society of the First Baptist Church, Empire, held a sale of fancy goods and aprons early in December for the purpose of raising money to furnish the new parsonage, which has just been completed. About $30 was made.

The Colonial Musical Association of Colon gave its first concert at Wesleyan Church on the afternoon of Sunday, December 11. The members of this organization are Jamaicans and employes of the Isthmian Canal Commission.

Observance of Christmas.

The Corozal Sunday school will hold appropriate exercises at the recreation hall on Christmas Eve. All residents of Corozal and Camp Diablo are cordially invited to attend. It is requested that presents for the Christmas tree be delivered not later than 4 p. m. on the 24th.

Colon Humane Society.

A meeting of the Colon Humane Society was held at the Government building, Colon, on Wednesday evening, December 7. The date of the Christmas dinner at the playground for the children has been fixed for December 24, instead of Christmas Day. The municipal band will play. Tracy Robinson, delegate to the International Humane Conference held in Washington in October, gave a report of the conference, and presented photographs of the delegates to the Colon society. An election of officers resulted as follows: President, Dr. Claude C. Pierce; vice-president, Frank Ullrich; secretary, J. A. Roberts; treasurer, Pascal Canavaggio; auditor, E. Lopez.

Election of Red Cross Officers.

Edw. Schildhauer, chairman of the nominating committee, announces the following results of the election of officers for the fiscal year ending October 31,1911: Chairman, Lieut.-Col. C. A. Devol, Culebra; vice-chairman, Lieut-.Col. Wm. L. Sibert, Gatun; secretary, F. C. Freeman, Culebra; treasurer, Lieut.-Col. Jno. L. Phillips, Ancon; executive committee, Major Chester Harding, Gatun; Colonel W. C. Gorgas, Ancon; R. C. Shady, Gorgona.

The original organization of the Canal Zone Chapter took place in January, 1909. The amended rules of the American National Red Cross, as published in "Charter, By-Laws and Regulations for State Boards and Chapters," issued January 1, 1910, provides under section 17—Fiscal year: "The fiscal year shall include the twelve months ending October 31." It also provides in section 26, that the officers shall be elected during the month of October. It seems desirable and necessary to bring the Canal Zone Chapter into line with the national organization, and, therefore, the officers recently elected will hold office until October 31, 1911. It also becomes necessary to collect membership dues for the ensuing year, and dues collected now, as well as those collected just prior to the President's reception, will be for the fiscal year ending October 31, 1911.

C. A. Devol,
Chairman, Canal Zone Chapter.

Personal.

The marriage of Miss Ethel Mason, daughter of Lieut-Col. Charles F. Mason, to Lieutenant J. R. D. Mathesson, U. S. A., will take place at St. Luke's Church, Ancon, on Tuesday afternoon, December 27. The ceremony will be followed by a reception at the residence of the bride. The wedding invitations have been delayed and will be sent out as soon as they are received.

Opening of Baseball Season.

At the meeting of the executive committee of the Panama Canal Baseball Association, consisting of E. J. Williams, chairman; R. H. Wardlaw, and Dr. J. C. Perry, held at Empire on December 11, it was decided to postpone the opening of the season's games from Sunday, December 18, until Sunday, January 1, 1911, New Year's Day. The schedule, as originally planned, provided for 30 games, but owing to the inability of the committee to arrange dates satisfactory to all the teams for a season of this length, it has been shortened by reducing the number of games to 20. The opening games will be played as follows:

At Colon park—Commissary-Subsistence vs. Atlantics.

At Empire park—Empire vs. Gorgona.

At Ancon park—Ancon vs. Marines.

Mr. J. P. Mead has been appointed official scorer for the league. The umpires will be elected from among the applicants receiving the highest number of votes cast by the managers and captains of the teams. The claims on various players were adjusted with one or two exceptions.

Band Concerts.

A concert will be given by the Isthmian Canal Commission Band at Porto Bello, R. P., on Sunday, December 18, 1910 at 2 p. m. The program follows:

1	March—*Festal Day*	Roux
2	Medley Selection—*Amina*	Halle
3	Waltz—*Cupid Astray*	Rolfe
4	Overture—*Lustspeil*	Keler Bela
5	Intermezzo—*Silver Bell*	Wenrich
6	Concert Piece—*Hearts and Flowers*	Tobani
7	Medley March—*Angel Eyes*	Jergensen
8	Patrol—*American*	Meacham
9	March—*Midshipman*	Laurendeau

As the accommodations for passengers on the tug, which will convey the members of the band to Porto Bello on December 18, are somewhat limited, it has been decided to issue a limited number o passes for the trip to accommodate those outside the members of the band who wish to make the trip on that date. These passes may be obtained of the musical director and members of the band.

A concert will be given by the Isthmian Canal Commission Band at Cristobal, C. Z., on Wednesday, December 21, 1910, at 8 p. m. The program follows:

1	March—*Columbia Phonograph Co*	Burton
2	Selection—*The Chocolate Soldier*	Straus
3	Intermezzo—*After Sunset*	Pryor
4	Overture—*Poet and Peasant*	Suppe
5	Waltz—*Tres Jolie*	Waldteufel
6	Medley Selection—*Popular Hits*	Alford
7	Song—*The Rosary*	Nevin
8	Humoresque—*What's the Matter with Father?*	Lampe
9	March—*The Coming Regiment*	Conterno

Chas. E. Jennings, *Musical Director.*

The next concert will be given at Culebra on Sunday, December 25, at 5.45 p. m.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

The standing in the Putnam medal bowling tournament is as follows:

Name.	Won.	Lost.	Name.	Won.	Lost.
Cohen......	5	2	Hayes, G. C	3	4
Herrington..	4	5	Hurst......	1	3
Mengel.....	1	1	Warner....	1	5
Huttlemeier.	4	6	Sickler.....	6	1
Cornthwaite.	6	4	Koperski...	1	3
Fleischman..	4	4			

The standing in the duckpin tournament is as follows:

Case.......	7	2	Hurst......	4	3
Conlan.....	3	4	Huttlemeier	5	4
Cushing....	1	2	Fleischman.	8	5
Dakin......	3	7	Judge......	5	5
Dubois.....	0	0	Koperski...	7	4
Fitz........	0	9	Lindsay....	1	1
Freeman....	0	0	McIlvaine..	5	3
Fredericks..	11	0	Palmer.....	0	2
Gould......	4	7	Sickler.....	5	9
Hill........	4	6	Putnam....	0	2

The following program was given at the informal "social" on Friday night: Selections by the male quartet of Culebra; violin solo, Mr. Logasa; brass bar. Mr. Kramer; vocal solo, Mr. Case; violin solo, Mr. Logasa; popular songs. After the program refreshments were served.

The glee club organized two weeks ago will give a concert in the near future.

EMPIRE.

Empire won three games from Cristobal on December 10, by the following scores:

Cristobal.				Empire.			
Barrett.....	175	162	180	Gustavson.	155	153	159
Weston.....	159	176	171	Potter....	206	189	204
Collins......	171	160	151	Bardelson.	162	153	160
Bullard.....	202	174	165	Pearson...	161	175	180
Louch......	144	....	133	Shaughne'y	189	192	156
Burns..........		113	....				
Total.....	851	785	800	Total...	873	862	859

The concert of sacred music on Sunday afternoon, December 11, was well attended. These concerts will be held monthly.

The Marine Band will be one of the attractions at the entertainment for the children of Empire on Christmas Eve.

The dramatic section will start rehearsals for a play under the direction of C. C. Carr on the 16th.

GORGONA.

The moving picture entertainment on Monday night, December 5, and Friday night, December 9, were well attended. Melville Booz presided at the piano on both occasions.

About 125 men were present at the meeting of the discussion club held on Wednesday night, December 7. The next meeting will be in the form of a "smoker," and will be held on Thursday, December 15, at which time officers will be elected.

A large audience attended the basketball game on Saturday night, December 10, between Cristobal and Gorgona. Cristobal won by the score of 45 to 36. On Saturday night, December 17, there will be a league bowling match between Culebra and Gorgona. The public is invited.

GATUN.

Gatun won at basketball on Saturday night, December 10, defeating Culebra by the score of 28 to 22. The line-up was as follows:

Culebra.	Position.	Gatun.
Purchase..............	R. F.............	R. Porter
Cushing................	L. F.................	Huber
Vifquain...............	C................	C. Porter
Tupper.................	R. G.................	Shell
Koperski..............	L. G...............	Connor

The next game of basketball to be played in Gatun will be with the Cristobal team, which now leads the league. This game will decide the championship, if Cristobal wins. It will be played on Thursday, December 22, at 8 p. m.

The physical department has just received a set of anthropometric instruments. The physical director will give examinations and prescribe exercises to club members free of charge. Mr. Ludwig will receive applications at any time. Systematic physical culture classes are conducted for men every Tuesday and Friday at 8 p. m.

The membership campaign inaugurated recently has already brought good results. The total is now 425, the largest in the Zone. Jones, Wood, Uritzel, Rohr, Heiskell, Buber, Gayer and McLain are among those who have brought in the largest number of new members.

Six men have signed for the mechanical drawing class which started on Wednesday night, December 7.

Fifteen men met for the first rehearsal of the glee club on Thursday night, December 8. A. B. Dickson, secretary at the Empire clubhouse, will act as conductor; rehearsal every Thursday night at 8 o'clock.

A machine for testing the lung capacity was placed in the lobby last Friday night and is attracting much attention.

Louis Durand has been appointed assistant to Mr. DePoorter in the pool room. Mr. DePoorter is looking for challenges on the Isthmus.

An electric fan has been installed in the barber shop.

Saturday night of this week a "smoker" and informal reception will be held at the clubhouse. Every man in town is invited.

CRISTOBAL.

The "strawberry" bowling tournament is increasing in interest. The highest individual score so far was made by Wood with 213. Other 200 scores in the tournament are as follows: Herring, 206; Barrett, 200, 209; Rosteck, 211; Bullard, 202. Other 200 scores on the alleys during the week were: Rigney, 201, 223; Burns, 215; Russell, 206; Veen, 202.

The office men's gynasium class meets regularly on Tuesday and Thursday afternoons at 5.30 o'clock. Evening gymnasium classes Tuesdays and Thursdays at 8 p. m.

The closing game of the Isthmian interassociation basketball league for Cristobal will be played on the Gatun floor Thursday night, December 22. A special train will be run from Cristobal to Gatun and return, leaving Cristobal about 7 p. m. The bowling match scheduled for December 24 will be bowled on the Gatun alleys December 22, between the Cristobal and Gatun teams.

A members' "smoker" will be given on Friday night, December 16. All members are urged to come.

Misdirected Letters.

Ancon, C. Z., December 12, 1910.

The following insufficiently addressed letters, originating in the United States and its possesions, have been received in the office of the Director of Posts and may be secured upon request of the addressee:

Arehart, G. W.
Barrat, Joseph G.
Beyer, Chas. S.
Carter, N. A.
Clans, Wm.
Cole, Lorenzo
Ennis, A. W.
Fay, John
Guardiola, Antonio
Gosdinski, Amelia D.
Johns, Karl
Leffner, A. M.
Lenzen, Joe
Lindsay, Wm. E.
May, Duncan
McClelland, John L.
Mocilla, A. J.
Post, Birt
Rackert, H. C.
Shaw Ernest
Smith, Jr., E. C.
Stickney, William
Strobel, Michael
Stubeck, Chas.
Tencha, Albert
Tuley, Willard P.
Ward, Miss Alice
White, Hugh J.
Williams, Mrs. Ida
Williams, Cyril

Rainfall from December 1 to 10, Inclusive.

MIDNIGHT TO MIDNIGHT.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		Ins.
Ancon..................	1.86	2	6.22
Balboa..................	2.00	10	5.70
Miraflores..............	2.03	3	5.06
Pedro Miguel..............	2.54	3	6.64
Rio Grande..............	2.41	1	8.51
Central Section—			
Culebra..................	2.95	1	9.26
Camacho..................	3.48	1	8.69
Empire..................	1.71	4	6.64
Gamboa..................	2.57	4	8.05
Alhajuela..................	2.63	6	10.36
El Vigia..................	3.55	3	11.82
Gorgona..................	3.40	3	10.07
San Pablo..................	3.24	3	9.62
Tabernilla..................	2.47	3	9.42
Bohio..................	3.02	4	9.41
Monte Lirio..................	2.64	4	7.16
Atlantic Section—			
Gatun..................	3.09	4	8.05
Brazos Brook..............	2.82	4	7.15
Cristobal..................	2.51	4	7.00
Porto Bello..................	1.96	4	*7.12
Nombre de Dios..............	3.72	4	9.72

*To 5 p. m., December 9.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending December 21, 1910. (75th meridian time):

DATE.	Low.	High.	Low.	High.	Low.
	A. M.	A. M.	A. M.	P. M.	P. M.
December 15....	......	2.08	8.32	2.43	8.54
December 16....	......	3.00	9.24	3.35	9.45
December 17....	......	3.50	10.12	4.23	10.35
December 18....	......	4.38	11.01	5.12	11.24
December 19....	......	5.27	11.49	6.00	A. M. 12.13
December 20....	......	6.15	P. M. 12.38	6.48	......
December 21....	1.05	7.06	1.28	7.40	......

OFFICIAL CIRCULARS.

Oil Containers.

CULEBRA, C. Z., December 13, 1910.

CIRCULAR No. 314-D:

The provisions of circular No. 314, covering the furnishing of "four suitable oil containers of at least five gallons capacity each" to each steam shovel, are hereby amended as follows:

Steam shovels will be furnished, each, with two five-gallon oil containers for valve and car oil, and with one one-gallon oil container for kerosene.

The equipment of all steam shovels will be changed to accord herewith.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Accumulative Leave for Hourly Employes.

CULEBRA, C. Z., December 8, 1910.

HEADS OF DEPARTMENTS AND DIVISIONS:

I quote below for your information copy of telegram forwarded today to the hourly gold employes:

"After January 1, 1911, accumulative leave will be authorized at the rate of two and one-third days per month for all gold hourly employes who have completed six months' satisfactory service, which leave may be taken on termination of service, except when services are terminated for cause."

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Acting Superintendent of Clubhouses.

CULEBRA, C. Z., December 9, 1910.

CIRCULAR No. 362:

Effective December 10, 1910, Mr. E. A. Putnam is appointed acting superintendent of clubhouses during the absence of Mr. F. C. Freeman, on leave.

GEO. W. GOETHALS, *Chairman.*

Duties of Traveling Engineers.

CULEBRA, C. Z., December 12, 1910.

CIRCULAR No. 266-E:

Effective Tuesday, January 3, 1911, and until further notice, Senior Traveling Engineer James G. Craig and Junior Traveling Engineer Arthur C. Stone will exchange stations and duties heretofore performed by them as stated in circulars No. 266-B, paragraph 12, and No. 266-C.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

The School Holidays.

ANCON, C. Z., December 10, 1910.

BULLETIN No. 5:

The public schools of the Canal Zone will close for the Christmas holidays on Friday, December 23, at the close of the afternoon session. Schools will reconvene Tuesday, January 3, 1911.

FRANK A. GAUSE, *Superintendent of Schools.*

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, December 10, 1910. All heights are in feet above mean sea level.

DAY AND DATE	STATION.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun. Dec. 4....	137.5	100.9	59.3	30.2	25.7
Mon. Dec. 5...	133.9	98.5	52.3	29.6	26.0
Tues. Dec. 6 ..	132.6	98.2	52.4	26.9	25.7
Wed. Dec. 7...	130.8	96.5	52.0	25.6	24.6
Thurs. Dec. 8..	129.0	95.1	49.1	23.8	23.3
Fri. Dec. 9.....	128.6	94.8	48.6	22.4	21.9
Sat. Dec. 10...	130.8	96.2	49.3	21.1	20.6
Height of low water.......	125.0	92.0	46.0		

Proposals for Excavation, Obispo Diversion.

Sealed proposals for excavation of about 21,942 cubic yards of earth, located between stations 1602 and 1612 on the east bank of the Canal, will be received until 2 p. m., December 15, 1910, and then opened. Full information will be furnished by the division engineer, Empire. Envelopes containing proposals must be endorsed "Proposals for Excavation, Obispo Diversion," and addressed C. A. DEVOL, *Chief Quartermaster.*

The following vessels arrived at and departed from the port of Balboa during the week ending December 10:

Arrivals—December 4, *Arica*, from Guayaquil; *Pectan* from Port Harford; December 6, *Ucayali*, from Callao; *Manavi*, from Buenaventura and Tumaco; December 8, *Limari*, from Valparaiso.

Departures—December 8, *Pennsylvania* and *Stanley Dollar*, to San Francisco; December 5, *Chile* to Valparaiso; December 9, *Pectan*, to Port Harford; *Arica*, to Guayaquil; December 10, *Manavi*, to intermediate ports; *Newport* to San Francisco.

COMMISSARY DEPARTMENT.

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning December 14.

	Price.
FRESH MEATS.	
Mutton—Stewing, per pound	*6
Shoulder, neck trimmed off, (4 lbs. and over), per pound	*9
Entire forequarter (not trimmed) 10 pounds and over, per pound	*8
Leg, (8 to 10 pounds), per pound	*17
Cutlets, per pound	*18
Short cut chops, per pound	*20
Lamb—Stewing, per pound	*6
Entire forequarter, neck trimmed off, per pound	*9
Leg (5 to 8 pounds), per pound	*20
Chops, per pound	*24
Cutlets, per pound	*24
Veal—Stewing per pound	*8
Shoulder for roasting (not under 4 pounds), per pound	*14
Loin for roasting, per pound	19
Chops, per pound	†24
Cutlets, per pound	†28
Pork cuts, per pound	19
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	9
Corned, per pound	12, 14, 16
Chuck roast, (3 pounds and over), per pound	13
Pot roast, per pound	15
Rib roast, second cut (not under 3½ pounds), per pound	18
Rib roast, first cut (not under 3 pounds), per pound	20
Sirloin roast, per pound	21
Rump roast, per pound	21
Porterhouse roast, per pound	21
Steak, Chuck, per pound	14
Round, per pound	15
Rib, per pound	20
Sirloin, per pound	21
Porterhouse, per pound	21
Rump, per pound	21
Tenderloin, per pound	24
MISCELLANEOUS.	
Livers—Beef, per pound	10
Calf, each	60
Half, each	30
Sausage—Pork, per pound	17
Bologna, per pound	12
Frankfurter, per pound	14
Leberwurst, per pound	13
Sweet bread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	†40
½ dozen only	†26
Bluefish, fresh, per pound	16
Cod, fresh, per pound	10
Halibut, fresh, per pound	15
Oysters, in 1-qt. kegs, keg	50
POULTRY AND GAME.	
Chickens—Fancy roasting, large, each	1.50
medium, each	1.30
Fowls, each	70, 82, 93, 1.04, 1 15
Ducks, large, each	1 50
medium, each	1 30
Broilers, each	75
Turkeys, per pound	30
Squabs, each	35
Capons, each	2.60
Geese, fatted, each	2.75
Pheasants, each	70, 1.00
Partridges, each	50
Grouse, each	85
CURED AND PICKLED MEATS.	
Ham—English York Cut, per pound	30
German, Westphalia, per pound	36
Sugar cured, per pound	20
Sliced, per pound	23
Half, for boiling, per pound	21
Boiled, per pound	25
Hocks, per pound	‡08
Bacon—Breakfast, whole piece, per pound	27
Breakfast, sliced, per pound	28
Beef, salt, family, per pound	9½
Pork, salt, family, per pound	14
Ox tongues, each	80
Pigs' feet, per pound	10
Tongues, per pound	16
Mutton, mess, per pound	7
DAIRY PRODUCTS.	
Butter—Creamery special, per pound	40
Cheese—Roquefort, per pound	38
Philadelphia Cream, cake	10
Young America, per pound	22
Swiss, per pound	26
Edam, each	1.00
Camembert, in large tins, tin	38
Camembert, in small tins, tin	14
Neufchatel, each	6
Gouda, per pound	34
Parmesan, per pound	35
Milk, Briarcliff, bottle	**25
Buttermilk, bottle	**15
Fer-mil-lac, bottle	10
Ice cream, quart	‡25
Ice cream, ½-gallon	‡50
VEGETABLES AND FRUITS.	
Beets, per pound	3
Celery, per head	6
Carrots, per pound	3
Cabbage, per pound	3
Cucumbers, per pound	10
Cauliflower, per pound	10
Lettuce, per pound	25
½ pound	13
Onions, per pound	3
Potatoes, white, per pound	3
Sweet, per pound	2½
Squash, per pound	4
Turnips, per pound	3
Yams, per pound	3½
Apples, per pound	5
Cranberries, per pound	10
Grapefruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12

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*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal and Colon during the week ending December 10, 1910:

Colon, December 4, from New York, with 3 cases motor parts, 4 cases electrical supplies for Atlantic Division; 9 pieces 24" pipe for Pacific Division; 500 bundles bolts, 450 pieces malleable iron castings, 28 cases welding material for Mechanical Division; 36 annual reports for Chief Engineer; 500 ash cans, 29 bundles strawboard, 65 kegs bolts, 91 bales hose, 9 barrels cable grease, 17 barrels nonliquid oil for stock; and a miscellaneous cargo, the whole consisting of 1,885 packages, weighing 154 tons.

Snested, December 4, from Baltimore, with 5 cases steam hammer parts 169 pieces steel beams, 362 pieces steel plates, 150 tons material for electric return railway for Atlantic Division; 6 dipper frames for Central Division; 567 tons lock construction material, 960 pieces corrugated steel bars, 150 tons material for electric return railway for Pacific Division; 525 pieces steel plates, 745 pieces steel angles, 25 pieces steel beams, 95 barrels fire brick for Mechanical Division; 13,500 cases dynamite, 210 cases window glass, 1,000 cans gasoline, 10,000 bundles tie plates, 20 cases neatsfoot oil, 1,978 pieces black pipe, 73 bundles black pipe, 6,250 bundles splice bars, 100 pieces steel plate, 205 pieces steel angles, 29 pieces steel beams for stock.

Sarnia, December 5, from New York, with 5 barrels brake shoes for Mechanical Division; 10 cases steel shafting, 200 barrels carbolic acid, 61 cases paper for stock.

In tow of tug *M. E. Luckenbach*, December 7, from Newport News, 2 steel barges for Atlantic Division.

Cristobal, December 7, from New York, with 24,000 barrels cement for Atlantic Division; 112,000 bags cement for Pacific Division.

Turrialba, December 8, from New Orleans, with 469,282 feet yellow pine lumber, 12 crates concrete mixing machinery for Atlantic Division; 29,488 feet white oak lumber, 498 bales straw, 25 bundles bed springs, 7 cases paint for stock.

Metapan, December 8, from New York, with 50 tons lock construction material for Atlantic Division; 50 tons lock construction material for Pacific Division; 18 cases tools for stock.

Advance, December 10, from New York, with 7 cases brake equipment, 7 cases electrical supplies, 17 pieces castings, 15 crates machinery for Atlantic Division; 9 barrels baffle brick, 26 pieces 24" pipe for Pacific Division; 10 pieces castings, 15 pieces steel plates for Central Division; 6 cases electrical material, 32 pieces steel bars, 48 locomotive tires, 622 bundles malleable castings for Mechanical Division; 32 cases drugs and sundries for Sanitary Department; 10 bales mattresses, 100 crates ivory soap, 10 bales rope, 14 cases steel bars, 34 barrels rosin, 75 cases water coolers, 16 bales rubber hose, 10 cases paper for stock; and a miscellaneous cargo, the whole consisting of 1,299 packages, weighing 217 tons.

Sale of Miscellaneous Articles at Public Auction.

There will be sold at public auction by the district quartermaster at Empire, C. Z., at his office, at 3 p. m., Thursday, December 15, 1910, to the highest bidder for cash, the following Isthmian Canal Commission property:

One lumber wagon, 13 duck balls, 39 bowling balls, assorted sizes, 8 old French axes, 20 old worn tires.

Payment will be effected and articles removed immediately upon completion of sale. The Government reserves the right to accept or reject any or all bids. For further information apply to the district quartermaster, Empire, C. Z.,

C. A. DEVOL, *Chief Quartermaster.*

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Panama	P. R. R.	Saturday	Dec. 10
Allianca	P. R. R.	Friday	Dec. 16
Colon	P. R. R.	Thursday	Dec. 22
Advance	P. R. R.	Thursday	Dec. 29
Panama	P. R. R.	Wednesday	Jan. 4
Allianca	P. R. R.	Tuesday	Jan. 10
Colon	P. R. R.	Monday	Jan. 16
Advance	P. R. R.	Saturday	Jan. 21
Panama	P. R. R.	Saturday	Jan. 28
Allianca	P. R. R.	Saturday	Feb. 4

CRISTOBAL TO NEW YORK.

Advance	P. R. R.	Friday	Dec. 16
Cristobal	P. R. R.	Friday	Dec. 16
Panama	P. R. R.	Thursday	Dec. 22
Allianca	P. R. R.	Wednesday	Dec. 28
Colon	P. R. R.	Tuesday	Jan. 3
Advance	P. R. R.	Tuesday	Jan. 10
Panama	P. R. R.	Monday	Jan. 16
Allianca	P. R. R.	Monday	Jan. 23
Colon	P. R. R.	Sunday	Jan. 29
Advance	P. R. R.	Friday	Feb. 3
Panama	P. R. R.	Friday	Feb. 10

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 11th and 28th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Zacapa	U. F. C.	Thursday	Dec. 8
Thames	R.-M	Saturday	Dec. 10
Sibiria	H.-A	Saturday	Dec. 10
Almirante	U. F. C.	Thursday	Dec. 15
Santa Marta	U. F. C.	Thursday	Dec. 22
Tagus	R.-M	Saturday	Dec. 24
Metapan	U. F. C.	Thursday	Dec. 29
Zacapa	U. F. C.	Thursday	Jan. 5
Oruba	R.-M	Saturday	Jan. 7
Almirante	U. F. C.	Thursday	Jan. 12
Santa Marta	U. F. C.	Thursday	Jan. 19
Magdalena	R.-M	Saturday	Jan. 21

COLON TO NEW YORK.

Metapan	U. F. C.	Thursday	Dec. 15
Prinz Joachim	H.-A	Tuesday	Dec. 20
Zacapa	U. F. C.	Thursday	Dec. 22
Oruba	R.-M	Monday	Dec. 26
Almirante	U. F. C.	Saturday	Dec. 29
Santa Marta	U. F. C.	Thursday	Jan. 5
Magdalena	R.-M	Monday	Jan. 9
Metapan	U. F. C.	Thursday	Jan. 12
Zacapa	U. F C.	Thursday	Jan. 19

NEW ORLEANS TO COLON.

Abangarez	U. F. C.	Saturday	Dec. 10
Parismina	U. F. C.	Wednesday	Dec. 14
Atenas	U. F. C.	Saturday	Dec. 17
Heredia	U. F. C.	Wednesday	Dec. 21
Turrialba	U. F. C.	Saturday	Dec. 24
Cartago	U. F. C.	Wednesday	Dec. 28
Abangarez	U. F. C.	Saturday	Dec. 31
Parismina	U. F. C.	Wednesday	Jan. 4

COLON TO NEW ORLEANS.

Turrialba	U. F. C.	Thursday	Dec. 15
Cartago	U. F. C.	Thursday	Dec. 15
Parismina	U. F. C.	Thursday	Dec. 22
Abangarez	U. F. C.	Thursday	Dec. 22
Heredia	U. F. C.	Thursday	Dec. 29
Atenas	U. F. C.	Thursday	Dec. 29
Turrialba	U. F. C.	Thursday	Jan. 5
Cartago	U. F. C.	Thursday	Jan. 5

COLON TO BARBADOS, CALLING AT TRINIDAD.

Thames	R.-M	Tuesday	Dec. 20
Tagus	R.-M	Tuesday	Jan. 3
Oruba	R.-M	Tuesday	Jan. 17

The next sailing of the Leyland Line will be as follows: *Mercian*, on or about December 17, for New Orleans, via Kingston, Ja.

Hamburg-American steamers leave for New York every Tuesday at 10 a. m., arriving there the following Tuesday, and for Port Limon every Tuesday or Wednesday via Bocas del Toro or Puerto Colombia.

Royal Mail steamers leave for New York on alternate Mondays at 5 p. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursday at 3 p. m.; for New Orleans via Port Limon and Puerto Barrios on Thursday at 6 p. m., and for New York on Thursday at 11 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3rd and 20th of each month.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, DECEMBER 21, 1910. No. 17.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Chairman's Monthly Report.

The report of the Chairman of the Isthmian Canal Commission for the month of November is published in full in other columns of this issue of THE CANAL RECORD. It gives a detailed account of the progress of Canal work in all departments and divisions.

Boilermakers for Canal Service.

The Washington office has been advised that the national headquarters of the Boilermakers' Union has instructed its subordinate offices to allow union boilermakers to enter the service of the Isthmian Canal Commission on the Isthmus.

Seven Thousand Barrels of Cement Daily.

During the dry season it is expected that the amount of concrete placed daily will be increased, and on this account, the contractor in the States has been advised that 500 barrels additional will be required each day. The total shipment per day will thus be 7,000 barrels, equally divided between wood and canvas containers. The increased shipments will be begun about February 25.

Improved Passenger Service.

On January 1, a new schedule of passenger trains will go into effect on the Panama railroad, which provides for a 10-minute reduction in the time of crossing the Isthmus, so that trains that now take 2 hours and 15 minutes will take 2 hours and 5 minutes. In the shuttle train service between Colon and Gatun, the train which leaves Colon at 6.20 a. m., and that which leaves Gatun for Colon at 8 a. m., will be discontinued.

On the first of the new year, or soon thereafter, a parlor car service between Colon and Panama will be instituted. The car will be attached to trains leaving Panama at 6.30 a. m. and 1.30 p. m., and leaving Colon at 10.30 a. m. and 4.35 p. m. The private car "America" is being remodeled for this service: there will be an observation platform on each end, and within, there will be 20 movable rattan chairs. Later, these chairs will be replaced by rattan reclining chairs of the parlor car type. Camp stools will be provided, so that all the passengers may sit on the observation platform. A fare of 25 cents will be charged, in addition to the regular ticket, for trips representing half the distance across the Isthmus, or less; and a fare of 50 cents for trips of more than half the distance across the Isthmus. If the parlor car service proves profitable, another car will be remodeled and all passenger trains will carry a parlor car.

An automatic signal system to control the movement of trains through Miraflores tunnel is being installed. The system is the same as that which controls the movement of trains over the Black Swamp gauntlet.

Concrete Mixers for Culebra Cut.

The Washington office has been directed to enter into a contract with the Ransome Concrete Machine Company of Dunellen, N. J., for a portable mixing plant with side discharge to be used in concrete revetment and retaining wall work in Culebra Cut. A portable tower concrete mixing and handling plant for this work will also be purchased from this company if certain modifications are made in the trucks of the car on which it submitted an estimate. The details of both these plants were published in THE CANAL RECORD of September 7, 1910. The board on revetment and retaining walls has reported in favor of carrying on the concrete work in only one locality during the coming dry season. This is at Paraiso slide, where it is desirable to maintain a construction track on the 95-foot berm. The length of the bank to be retained is about 900 feet.

Steam Shovel Record at Gatun.

On December 6, the 45-ton steam shovel, No. 51, working at Gatun Spillway excavated 2,448 cubic yards of earth in an 8-hour day. T. P. Kelliher was runner, and L. P. Bonnell, craneman. The best record previously made by a 45-ton shovel was that by shovel No. 58 of the Central Division, which excavated 1,356 cubic yards of earth and rock on February 5, 1908.

Excavation Work at Mindi.

When the excavation in the pit at Mindi was resumed on October 24, dredge *No. 86* was withdrawn from Gatun Dam and set to work there, and about the same time, the suction dredge *Sandpiper* began pumping mud and coral sand from the bed of Folks River into the Colon flats. On November 13, dredge *No. 86* was transferred to Folks River, exchanging positions with the *Sandpiper*, the move being made with a view of advancing the Colon work more rapidly. Up to the date of the transfer, dredge *No. 86* had pumped 141,679 cubic yards of material out of the Mindi pit, and from November 14 to the end of the month, the *Sandpiper* pumped 72,318 cubic yards, making a total of 213,997 cubic yards removed at that point to December 1. The mud and water at Mindi is allowed to flow on to the lowland east of the pit, the water passing under the Panama railroad tracks, thence to the ocean via the Mindi River. The estimate made prior to the resumption of work at Mindi showed that there were 552,000 cubic yards of wet excavation and 562,000 cubic yards of dry excavation to be removed from the pit.

Terminal Facilities and Freight Business.

The great increase in freight business between San Francisco and New York, by way of the Panama railroad steamships, since the California and Atlantic Steamship Company instituted its new service in October and the Pacific Mail Steamship Company improved its service between San Francisco and Panama, makes necessary an extension of the cargo handling facilities at both terminals of the railroad.

In November, 1910, the through freight from Colon to Panama amounted to 26,513 tons, as compared with 21,571 tons in the same month of 1909, and the freight from Panama to Colon for transportation to the States amounted to 22,734 tons, as compared with 12,049 tons in 1909. This increase in business has made it necessary for the Panama railroad to send forward on the cement ships *Ancon* and *Cristobal* from 1,000 to 2,000 tons of cargo each voyage, in addition to the freight handled on the four ships in the regular service. The freight carried from San Francisco to New York consists of wine, canned goods, and general merchandise, and that carried from New York to San Francisco is largely structural iron and pipe. The improved steamship service, both on the Pacific and the Atlantic, has resulted in freight being transported more rapidly in some instances by the Panama route than by the railroads across the continent. The time in transit takes from 23 to 30 days.

In order that the freight may be handled more expeditiously, dock No. 11 at Cristobal is being remodeled. All the offices will be taken from the cargo floor and placed over the waiting room, and the waiting rooms and baggage rooms will be reduced in size, and thus all available space will be utilized for freight. Borings are being made north of dock No. 11, with a view of extending the wharf 500 feet into the bay. Dock No. 1 at Colon is being extended 150 feet, in order to provide additional facilities for ships of the United Fruit Company and the California-Atlantic Company.

Plans for the extension of the docks at Balboa, the Pacific terminal, were published in THE CANAL RECORD of September 14, 1910. A requisition has been made on the New York office of the Panama Railroad Company for eight cranes to be erected on this wharf to take the place of four Wellman-Seaver-Morgan, and six old French cranes now installed there. The part of the dock on which

NOTES OF PROGRESS.

(Continued.)

the new cranes will be erected is known as the "steel pier" and it was first used in 1899. It is now provided with 10 "A" frame, swing boom, traveling cranes of 1½ tons capacity, and work has already been begun to strengthen it, so that it can support a concrete floor and the eight 4-ton cranes which will take the place of the old cranes.

The specifications call for 4-ton electric cargo handling cranes, capable of handling general merchandise or lumber from the holds of vessels tied up at the dock, and delivering it under cover in the dock. They must be capable of lifting the full load of four tons a maximum distance of 90 feet at a speed of 300 feet per minute, carrying it along the boom at the rate of 600 feet per minute, and depositing it on the wharf, the operation not to occupy over one minute. The cranes will move longitudinally along the front of the dock at a speed of 100 feet a minute, and the booms must extend over the ship a distance of 40 feet from the center of the crane tower to the center of the ship. All movements must be controlled from an operating platform, so located as to enable the operator to observe and control the load from the time it is raised from the hatch until it is safely deposited on the wharf. The first crane must be delivered within four months of the awarding of the contract and all of them within eight months.

Gatun Dam Spillway.

Concrete was placed in the spillway of Gatun Dam during the week ending December 17, as follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
	Cu. Yds.		
December 12	300	9:00	1
December 13	215	9:00	1
December 14	294	9:00	2
December 15	210	7:00	1
December 16	160	6:00	1
December 17	300	8:00	1
Total	1,479	48:00	
Previously reported	110,520		
Grand total	111,999		

Ancon Quarry.

A statement of the rock crushed at Ancon quarry for the weeks ending December 10 and 17, follows:

DATE.	Hours worked.	Cubic Yards.
December 5	5:40	1,584
December 6	6:05	1,494
December 7	10:15	3,195
December 8	8:30	2,436
December 9	8:55	2,763
December 10	8:55	2,741
Total	48:20	14,213

DATE.	Hours worked.	Cubic Yards.
December 12	8:55	3,000
December 13	9:40	3,105
December 14	6:55	2,295
December 15	7:40	2,730
December 16	9:10	2,970
December 17	7:30	1,995
Total	49:50	16,095

Opening of New Fire Station at Gatun.

The new west side fire station at Gatun was formally opened on Tuesday evening, December 13, by the members of the three volunteer companies, and their friends. The house was attractively decorated. During the evening arrangements were made for a competitive run by the three Gatun volunteer companies, with a flag for a prize, to be held on Washington's Birthday.

Excavation on Bas Obispo Diversion.

The contract for excavating about 21,942 cubic yards of earth for the Obispo diversion on the east bank of the Canal opposite Las Cascadas, has been let to Vernon Holiness of Empire at 29½ cents a cubic yard. The only other bid received was that of B. B. Duncan of Las Cascadas for 33¼ cents a cubic yard. The excavation is for the relocation of the diversion eastward of the present location opposite Las Cascadas, because at this point it is in danger from the Whitehouse slide.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Concrete work in Gatun Locks is over 46 per cent completed, 969,279 cubic yards, out of a total of 2,085,000, having been placed at the close of work on December 17.

A statement of the amount of concrete placed in the locks each day for the week ending December 17, and of the total, follows; and a similar statement for the work in the Spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
December 12	1,756	28:46	6	852	11:40	2	135½	2,773½
December 13	2,012	37:50	6	930	11:40	2	294¾	3,266¾
December 14	2,096	36:09	6	1,124	13:40	2	311¾	3,550¾
December 15	1,672	26:08	6	1,036	13:40	2	307¼	3,034¼
December 16	1,736	27:46	6	736	10:40	2	268¼	2,759¼
December 17	1,968	31:15	8	1,014	13:40	2	317¼	3,299¼
*Portable mixer				117				
Total	11,240	187:54	6.33	5,809	75:00	2	1,634¾	18,683¾
Previously reported								950,595¼
Grand total								969,279

*The 117 yards shown for the portable ⅓-yard mixer were placed on the following days, and are included in the total shown for each day: December 12th, 30 yards; December 13th, 30 yards; December 14th, 19 yards; December 15th, 19 yards; December 16th, 19 yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is about 55 per cent completed, 460,095 cubic yards, out of a total of 837,400, having been placed at the close of work on Saturday, December 17. Berm crane "E" was placed in operation again on Wednesday, after a shut-down of four days. The record of concrete laid during each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
December 12	1,244	16:33	2	718	17:25	3	26	1,988
December 13	1,120	15:00	2	402	9:75	3	12	1,534
December 14	1,176	16:00	4	496	13:33	3	15	1,687
December 15	1,074	16:33	4	366	9:50	2	45	1,485
December 16	972	10:00	4	466	11:25	2		1,438
December 17	952	6:75	4	420	12:50	3		1,372
Total	6,538	80:41	3.33	2,868	73:58	2.67	98	9,504
Previously reported							3,844	450,591
Grand total							3,942	460,095

The record of concrete placed in the upper lock at Miraflores, during the six 8-hour working days of the week ending December 17, follows:

MIRAFLORES LOCKS.

DATE.	AUXILIARY PLANT.										Total.
	2-cubic yard mixers.			⅓-cubic yard mixers.			⅓-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
Dec. 12	420	8:00	2	404	27:00	4	33	3:00	1	10	867
Dec. 13	508	8:67	2	448	27:42	4	52	5:50	1	5	1,013
Dec. 14	580	10:00	2	390	27:75	4	92	8:00	1	2	1,064
Dec. 15	470	8:00	2	363	24:00	4	63	6:00	1	8	904
Dec. 16	456	8:00	2	534	29:00	4	37	3:50	1	8	1,035
Dec. 17	560	8:50	2	193	17:50	4	34	4:50	1	5	792
Total	2,994	51:17	2	2,332	152:67	4	311	30:50	1	38	5,675
Previously reported										2,123	82,866
Grand total										2,161	88,541

A CANAL ZONE CHRISTMAS.

Church Services and Community Celebrations.

The Christmas Day services in St. Luke's Church, Ancon, will be as follows: 7 a. m., holy communion; 9 a. m., Sunday school; 10 a. m., divine service, with sermon; 8 p. m., evensong. The Rev. Henry B. Bryan will officiate.

The Sunday school celebration of the Methodist Episcopal Church, Panama, will be held on Christmas Eve at 7.30. There will be exercises, consisting of songs and recitations, and a cantata entitled "The Star of Peace" will be sung by the pupils of the school. The services on Christmas Day will be: Spanish service at 9 a. m., the Rev. Charles W. Ports, preacher; English service at 10 a. m., the Rev. W. W. Gray, preacher, and Sunday school at 11 a. m.

The Corozal Sunday school celebration will be held in the social hall on Christmas Eve.

At Pedro Miguel, there will be a public celebration with a tree and gifts for the children of the village on Christmas Eve. The program will include a Christmas cantata by the children.

The public celebration at Culebra will be held in the clubhouse on Christmas Eve, beginning at 7.30. There will be a program consisting of songs and recitations, and a Christmas play by the children of the Sunday school. Apples and nuts will be distributed and refreshments will be served. The gifts for the Sunday school children will be presented in the chapel on Christmas Day at 9.30 a. m. The church services in the chapel for Christmas Day will be as follows: Episcopal service at 11 a. m., with holy communion, Chaplain Brown officiating; union service at 7.30 p. m., the Rev. A. A. Nellis, preacher. There will be the usual service at the Culebra penitentiary on Sunday morning, December 25, at 8.30 o'clock, the Rev. S. Moss Loveridge, preacher.

The Church of the Holy Redeemer at Culebra will have a Christmas tree for the children of the Sunday school on Christmas Eve. On Christmas Day, the tree will be taken to the Culebra Spanish school, where it will be redecorated, and gifts will be distributed to the children of that school. Midnight mass will be celebrated by the Rev. Father Collins on Christmas Eve.

The Empire Christmas services will be held in the Commission chapel at 11 a. m., the Rev. A. A. Nellis, preacher, and in the evening at 7.15 o'clock, the Rev. J. H. Coin, preacher. The general celebration will be held in the clubhouse on Christmas Eve, beginning at 7 o'clock. There will be a children's entertainment, with recitations, music, and a Christmas tree with Santa Claus to distribute gifts. Following this, there will be a program for the older people. Refreshments will be served in the reading room from 9 to 11 o'clock. The Marine band from Camp Elliott will play.

The Sunday school celebration at Las Cascadas will be held in the Commission chapel on Friday evening, December 23. There will be a tree, with gifts for the pupils of the school, and a program of songs and recitations by the children.

At Bas Obispo, there will be an entertainment and "treat" for the children in the social hall on Christmas Eve.

The community celebration at Gorgona will be held in the clubhouse on Christmas Eve. There will be a tree, and each child will receive a stocking filled with candy, nuts, and fruit. Those who wish to place their gifts on the tree for friends and relatives are invited to do so. The children will sing a cantata entitled "Sleepy Santa Claus." Toward this general celebration all the fraternal and other organizations in the village have contributed. A committee of 30 has had charge of the arrangements. The Christmas celebration of the Union Sunday school will be held on New Year's Eve in the chapel. There will be a program, consisting of Christmas hymns, and a candle drill by the infant class.

The general Christmas celebration at Gatun will be held in the clubhouse on Friday evening, December 23. Two large Christmas trees will be provided, and gifts will be distributed to about 300 children. A program of songs and recitations, and a Christmas cantata will be rendered by the children. The Americans at Gatun will provide a Christmas celebration for the Spanish and West Indian children in the new village at Gatun on Christmas afternoon from 2 to 5 o'clock. Presents will be distributed. Christmas Day services at Gatun will be held in the Commission chapel at 10.45 a. m., and at 7.30 p. m., the Rev. Charles O. Purdy, preacher.

The Cristobal celebration will be held in the Commission clubhouse on Christmas Eve. The feature of the program is a play entitled "The Birds' Christmas Carol," which will be acted by the children of the Sunday school. There will be a tree, and a distribution of gifts. The service at the chapel will be at 7.30 p. m., the Rev. Carl H. Elliott, preacher. Sunday school will be held at 10 a. m.

A midnight mass will be sung at St. Rita's Church in New Gatun, beginning about 11.30 p. m., Christmas Eve. Confessions will be heard at any time during the evening up to that hour. On Christmas Day, a high mass will be sung at St. Rita's Church at 10.30 a. m.

Christmas at Culebra Penitentiary.

A committee of ladies residing in Culebra, with Mrs. C. A. Devol as chairman, is arranging for a Christmas treat for the inmates of Culebra pentitentiary. Cakes and ice cream, nuts, fruit, candy and tobacco will be furnished. Donations are solicited from residents of Empire, Culebra and Ancon. Cakes and articles of food may be delivered to the district quartermasters on the afternoon before Christmas. Subscriptions of money are also asked, and these may be also handed to the district quartermasters, or forwarded to Mrs. Devol in Culebra. It is purposed to use any money remaining from the Christmas fund for the purchase of French and Spanish books for the penitentiary library.

Church Notes.

The Rev. Aquila Lucas, representative of the International Sunday School Association for South America and the West Indies, will arrive on the Isthmus for his annual visit on December 22, and will remain until January 3. His visit will be largely devoted to the work of the Sunday schools for colored children.

The proceeds of the recent sale for the benefit of St. Mary's Church, Empire, amounted to $55. The money will be placed in the fund already started for the purchase of a new organ for the church.

The Ladies' Foreign Missionary Society, connected with the Methodist Episcopal Church, Panama, has taken up the study of a book entitled "Western Women in Eastern Lands." It treats of the efforts of cultivated Christian women in the Orient. A Spanish branch of the society has been organized with ten members. Mrs. C. W. Ports is president. The branch meets at the homes of the members on the last Thursday in each month.

The Rev. Charles O. Purdy of Des Moines, Iowa, the newly appointed Commission chaplain assigned to duty at Gatun, arrived on the Isthmus on Thursday, December 15, and preached at the two services in the chapel on the following Sunday, under the auspices of the Gatun Christian League. The morning service was attended by about 45 people, and in the evening there was a congregation of 80. Mr. Purdy is a graduate of Drake University and has been active in the ministry for five years. An informal reception was tendered to the new pastor on Tuesday evening, December 20, and on Wednesday evening, December 28, a general reception will be given for him in the clubhouse.

The Ladies' Aid Society, in connection with the Union Church at Cristobal, maintains a scholarship in the Methodist College at Panama, a little Spanish girl being the beneficiary. The society has taken up sewing for a small mission in New York as its work for the winter.

The building recently erected at Gatun for use as a chapel by the Catholics in the American settlement, has been completed and will be opened for services on Christmas morning. Mass will be said by Rev. M. A. Jiamona at 9 o'clock that morning, and all will be made welcome.

Dances.

The Cristobal Catholic Club will give a Christmas dancing party at the Cristobal clubhouse on Monday evening, December 26.

The Strangers' Club will give a dance in the rooms of the club on New Year's Eve, December 31.

Cristobal Woman's Club.

The meeting of the home department of the Cristobal Woman's Club was held in the clubhouse on Wednesday, December 14. Mrs. Carl H. Elliott and Mrs. J. W. Veen read papers on domestic science. Mrs. Elliott and Mrs. L. E. Willson were the hostesses. The club has voted $100 toward the Christmas celebrations for the children in Colon and Cristobal, $35 of which is for the Christmas dinner to be given by the Colon Humane Society on December 24.

Policemen Accidentally Shot.

The discharge of a revolver in the hands of Sergeant Guy Johannes of the Canal Zone police department caused the death of J. A. Prout, a patrolman in the same service, at Empire, in the early morning of December 14, during a struggle in a dark alley in which each was acting upon the belief that the other was a suspicious character. The injured men were taken to Ancon Hospital, where Prout died in the evening of the same day. The latter was a native of Barbados and joined the police force in September, 1905. A wife and three children survive him. Johannes is an American and has been on the force since November, 1906. Both men were well known to each other, and on the night in question darkness alone prevented recognition.

LOST—On Sunday morning, December 18, either on first train between Gorgona and Mount Hope, or on tugboat to Porto Bello, a hotel coupon book. Finder please return to A. W. Fahr, I. C. C. check No. 31134, Gorgona, C. Z.

CANAL WORK IN NOVEMBER.

Monthly Report of the Chairman and Chief Engineer to the Secretary of War.

CULEBRA, C. Z., December 15, 1910.

The Honorable the Secretary of War,
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of November, 1910:

Department of Construction and Engineering.

The following table summarizes the principal items of construction work accomplished by the Atlantic, Central and Pacific Divisions during the month:

ITEM.	Unit.	Atlantic.	Central.	Pacific.	Total.
Work excavation, dry	Cubic yards	94,552	1,465,636	20,036	1,580,224
Work excavation, wet	Cubic yards	600,708	4,800	473,314	1,078,822
Total work excavation	Cubic yards	695,260	1,470,436	493,350	2,659,046
Plant excavation, dry	Cubic yards	24,958	....	....	24,958
Plant excavation, wet	Cubic yards	188,852	....	133,181	322,033
Total plant excavation	Cubic yards	213,810	....	133,181	346,991
Total Canal excavation	Cubic yards	909,070	1,470,436	626,531	3,006,037
Material placed in dams	Cubic yards	395,771	....	56,404	452,175
Concrete laid	Cubic yards	80,803	....	88,119	168,922
Explosives used	Tons (Gross)	71.58	174.80	31.42	277.80
Rock drilled	Feet	54,930	354,365	38,637	447,932
Tracks removed	Miles	....	6.67	....	6.67
New tracks laid	Miles	1.84	15.18	1.74	18.76
Rock crushed	Cubic yards	66,699	307	59,136	126,142
Cement used	Barrels	78,748	101	89,992	168,841
New roads built	Miles	0.16	....	0.22	0.38
Water mains laid	Feet	5,727	1,700	673	8,100
Sewers laid	Feet	2,546	448	437	3,431
New drains and ditches dug	Feet	8,940	4,030	10,300	23,270
Average daily force	....	8,351	8,946	4,234	21,531
Average rainfall	Inches	28.05	13.81	11.77	14.83

Atlantic Division.

GATUN LOCKS.

Excavation—Shovel excavation during the month was carried on in the lower chamber and forebay, and on a hill north of the machine shop. The work in the forebay was necessitated by a slide, which took place on the east side of the locks, and was completed during the month. A total of 87,916 cubic yards of material was removed. Of this amount, 23,360 cubic yards were excavated outside the limits of the Canal prism for the impervious back fill. On November 30, the total material removed amounted to 5,499,169 cubic yards, of which 4,790,367 cubic yards had been removed from the Canal prism. The excavation was 94 per cent completed.

Receiving and Issuing Material—The receipts of material during the month were in all cases in excess of the consumption.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS, GATUN LOCKS.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)	12.00	(av.) 9.30
Average number of hours per day worked per strand of cableway laying concrete and large stone (actual working time)	8.17	....
Average number of mixers per day	6.00	2.00
Average hourly output per mixer, (actual working time) cu. yds.	52.29	65.71
Average amount of concrete and large stone laid per hour, per strand of cableway, or per derrick (actual working time) cu. yds.	31.92	....
Large rock laid, cu. yds.	4,568¾	2,036
Concrete laid, cableways, cu. yds.	46,204	....
Concrete laid, derrick, cu. yds.	338	....
Concrete laid, derrick, dumping and lift, cu. yds.	....	21,196
Concrete laid, portable ½-yard mixer	....	406½
Total amount concrete and large rock laid, cu. yds.	51,110¾	23,638½

Concrete from the auxiliary plant is placed by derricks, dumping, and a lift; it is therefore impracticable to estimate the average amount placed per hour by each of these units.

Mixing and Placing Plants—These plants were kept in a satisfactory condition during the month, although the output from plant No. 2 was somewhat diminished by the necessity of using some of the narrow gage equipment for removing a slide on the east side of the locks.

Concrete Work—There was a decrease of 11,796½ cubic yards in the amount of concrete laid, as compared with the figures for the preceding month. The daily average for the 24 working days was 3,131 cubic yards. The total amount of concrete placed during the month was 75,152 cubic yards, including 6,617¾ cubic yards of large stone. The bucket measurement exceeded the place measurement by 402¾ cubic yards. Of the total new concrete, 21,436½ cubic yards were placed in the upper lock and 53,715½ cubic yards in the middle lock. The concrete work in the upper lock was 75 per cent completed, and the concrete work for the entire lock system, 45 per cent completed at the end of November.

Power Plant and Pumps—The operation of the power plant and pumps during the month was satisfactory.

Iron and Steel Work—During the month the setting of the sills for the lower gates of the upper lock, and the setting of castings for Stoney gate valves was commenced.

Back Fill—The back fill was increased by 37,139 cubic yards, making the total placed at the end of the month 144,784 cubic yards. The back fill was 11.98 per cent completed.

GATUN DAM.

Construction during the month increased the total fill, as determined by cross sections of the material in place, by 380,334 cubic yards, making the total amount in place 10,919,959 cubic yards.

Hydraulic Fill—The dredges increased the hydraulic fill by 129,666 cubic yards. The hydraulic fill in the east valley was allowed to drain and settle from September 23 to November 14, during which time no material was pumped into this section. Cross sections as of November 14 showed a consolidation amounting to 55,741 cubic yards. The total hydraulic fill in place November 30 was 5,534,114 cubic yards. At the end of the month the water surface in the hydraulic fill east of the Spillway was at elevation plus 57.5, and in the hydraulic fill west of the Spillway at elevation plus 30.7.

Dry Fill—The material received from the Central Division, the locks, the spillway and the plant excavation, amounting to 250,668 cubic yards, was placed on the north and south toes of the dam, east and west of the spillway, making the total dry fill in place 5,385,845 cubic yards.

GATUN SPILLWAY.

Concrete—The construction of the east and west approach walls was continued, 5,651 cubic yards of concrete being placed, of which 129 cubic yards were bulk rock, which increased the total to 107,671 cubic yards.

Excavation—For the forebay and for the foundations of the approach walls, 29,996 cubic yards of material were excavated, increasing the total spillway excavation to 1,548,001 cubic yards.

Cut-off Levee—No work was done on the levee from Spillway Hill to Mindi Hill, the total fill of 177,158 cubic yards, as stated in the report for October, having practically completed the construction of this levee.

HARBOR AND CHANNEL SECTION.

Excavation below Sea Level at Mindi—Dredge *No. 86* was engaged on this work up to November 13, and the dredge *Sandpiper* from November 14 to November 30, a total of 213,997 cubic yards being removed.

Dredging from the Ocean to Mindi—Seven dredges removed 513,392 cubic yards of earth and 67,316 cubic yards of rock from the Canal prism. In addition, the dredge *Caribbean* removed 122,565 cubic yards of earth from the channel to dock No. 14. On November 30, 1910, forty feet of water could be carried from zero to zero plus 4,200 feet; 30 feet to mile 5 plus 850 feet, and 20 feet to mile 5 plus 2,550 feet, the end of the cut.

PORTO BELLO.

PERFORMANCE OF ROCK CRUSHER PLANT.

	Hours.
Length of working day	12:00
Average number of hours worked per day (actual working time)	8:07
	Cu. Yds.
Average output per hour of working day	232
Average hourly output for possible working time of 251 hours and 8 minutes	266
Average output per working hour	342
Total for month	66,699
Maximum day's output	3,773

SAND, STONE AND CEMENT SERVICE.

In connection with this service, plant steamed 10,970 miles, handled 757 barges, and carried about 1,964 passengers.

COLON BREAKWATER.

At Toro Point, 38,338 cubic yards of material were excavated, of which 8,434 cubic yards were used for ballasting track and 29,904 cubic yards were placed in the breakwater. The double track trestle was extended 445 linear feet.

NOMBRE DE DIOS.

During the month, 86 barges, containing 44,654 cubic yards of sand, were shipped to Gatun.

MUNICIPAL ENGINEERING.

The reservoirs, water mains, sewers, roads, and oil pipe lines were maintained and extended as required to facilitate construction work. Work was continued on the Colon municipal improvements, the dredge *Sandpiper* placing 22,137 cubic yards and *No. 86*, 43,970 cubic yards in the fill of the city.

Central Division.

During the month of November, the total amount of material excavated in the Central Division was 1,470,436 cubic yards, of which 417,359 cubic yards were classified as earth, and 1,053,077 cubic yards as rock. Of this quantity, 1,444,567 cubic yards were removed by steam shovels, 21,069 cubic yards blasted and washed away, and 4,800 cubic yards by sluicing (contract). Of the total, 1,470,436 cubic yards consisted of primary excavation for the Canal prism.

The daily average number of steam shovels at work during the month was 49.13, and the total number of shovel days was 1,179, as compared with 47.50 shovels at work during the month of October with 1,235 shovel days.

For comparison with the work done by steam shovels during the corresponding month of the previous year, the following table has been prepared:

Period.	Excavated by shovels.	Classification of material.		Av. No. of shovels at work.	W'k'g days.	Av. yards per shovel day.
		Rock.	Earth.			
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*			*C. Y.*
1909: Nov....	1,163,700	967,891	195,809	41.75	24	1,161.3
1910: Nov....	1,444,567	1,053,077	391,490	49.13	24	1,225.2

Rainfall at Empire: 1909, 20.99 ins.; 1910, 8.85 ins.

The above table shows the average output per shovel to be 5.5 per cent greater in November, 1910, than in the corresponding month of the previous year.

The total amount of material excavated from the prism in the Culebra section of the Central Division in November, 1910—1,209,554 cubic yards—was the highest record in that section for the month of November, the previous high record having been in November, 1909, when 1,170,792 cubic yards were removed.

The total estimated amount of material to be removed in the Central Division was 97,125,018 cubic yards, and up to December 1, 1910, 66,383,794 cubic yards had been removed, leaving 30,741,044 cubic yards to be removed in order to complete all excavation in the Central Division. From these figures it will be seen that 68.35 per cent of all excavation in the Central Division had been completed up to the close of the month of November, and 31.65 per cent remained unfinished.

Considering the two sections which compose the Central Division, the excavation completed and that to be completed at the close of November operations was as follows:

CULEBRA SECTION.

	Cubic Yards.
Completed	55,694,533
To be completed	28,492,191

CHAGRES SECTION.

Completed	10,689,441
To be completed	2,248,853

From the above figures it will be seen that the Culebra section, locally known as the Culebra Cut, was 66.16 per cent completed, with 33.84 per cent to be completed; the Chagres section was 82.62 per cent completed, with 17.38 per cent to be completed.

During the month, 3,420 cubic yards of material were hauled from the Canal prism and dumped in the embankment for the roadbed of the relocated Panama railroad in the vicinity of Pedro Miguel. The total amount of spoil from the Central Division used for this purpose at the close of the month was 3,718,248 cubic yards. The Central Division also delivered at Gatun 189,110 cubic yards of rock and earth for use in the construction of the dam, making the total for this purpose at the end of November 2,367,652 cubic yards.

The daily average number of laborers at work on the whole division during the month was 8,039, and the daily average number of gold employes, 917.

Pacific Division.

DISTRICT NO. 1—LOCKS AND DAMS.

The total excavation during the month amounted to 20,036 cubic yards. During November, no dry filling was added to the prism of the west dam at Pedro Miguel, the total amount of material in place at the close of the month remaining at 260,852 cubic yards, as previously reported. The back fill at Pedro Miguel was increased by 3,822 cubic yards, the total in place at the end of the month amounting to 22,098 cubic yards. At Miraflores, 8,960 cubic yards were added to the dry fill in the toes, and 47,444 cubic yards to the hydraulic fill in the core of the west dam, making the totals at the end of the month 570,639 cubic yards and 226,031 cubic yards, respectively. No material was added to the back fill, leaving the total amount in place at the end of the month 133,545 cubic yards.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT PEDRO MIGUEL.

	Permanent Plant.	Auxiliary Plant.
Length of working day, (one day of 12 hours) hours	8.00	8.00
Average number of hours per day worked laying concrete and large stone (actual working time)	6.75	4.73
Average number of mixers per day	4.00	2.00
	Cu. Yds.	*Cu. Yds.*
Average hourly output per mixer (actual working time)	83.46	44.24
Average amount of concrete and large stone laid per hour per chamber crane (actual working time)	80.25	28.76
Large rock laid	15.00	230.00
Concrete laid	51,983.00	12,020.00
Total concrete laid	51,998.00	12,250.00

PEDRO MIGUEL HANDLING PLANT.

The excavation for the west wall in the forebay was completed at the end of the month and it was expected that the concrete mixer at the south end of the west storage trestle would be placed in operation during the early part of December. The concrete work at Pedro Miguel for November showed an increase of 2,826 cubic yards over the figures for October. The total amount placed was 64,248 cubic yards, including 245 cubic yards of large stone.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT MIRAFLORES.

	Permanent Plant.	Auxiliary Plant.
Length of working day, (one day of 12 hours) hours	8.00	8.00
Average number of hours per day worked laying concrete and large stone (actual working time)	3.99	6.62
Average number of mixers per day	....	6.58
	Cu. Yds.	*Cu. Yds.*
Average hourly output per mixer (actual working time)	....	24.24
Average amount of concrete and large stone laid per hour, per crane (actual working time)	....	....
Large rock laid	350.00	373.00
Concrete laid	15,556.00	7,592.00
Total concrete laid	15,906.00	7,965.00

The output of the above plant was placed by berm crane, derricks, dump cars or dumped from mixers directly into forms.

Permanent plant consists of one berm crane operating one boom.

Auxiliary plant consists of two 2-cubic yard mixers, four ½-cubic yard mixers and one ⅓-cubic yard mixer.

MIRAFLORES HANDLING PLANT.

Work on the west storage trestle at Miraflores was continued during the month. The total of concrete and large stone laid was 23,871 cubic yards, as compared with 22,159 cubic yards during October.

DISTRICT NO. 2—DREDGING.

The following is a statement of the output of the five dredges in operation during the month, and of the amount of material excavated hydraulically:

DREDGE.	Type.	WORK.		PLANT.		Total.	Remarks.
		Earth.	Rock.	Earth.	Rock.		
		Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*	
Cardenas	Dipper	48,519	7,379	....	....	55,898	Place measurement
Badger	Ladder	37,448	27,292	....	....	64,740	Place measurement
Marmot	Ladder	....	....	133,181	....	133,181	Place measurement
Mole	Ladder	10,875	4,600	....	....	15,475	Place measurement
Culebra	Suction	289,757	....	....	....	289,757	Scow measurement
Total	....	386,599	39,271	133,181	....	559,051	
Hydraulic excavation	....	*47,444	....	....	....	47,444	Place measurement
Grand Totals	....	434,043	39,271	133,181	....	606,495	

* Excavated from lower lock site at Miraflores.

CHAMÉ SAND EXCAVATION.

Approximately 43,600 cubic yards of sand were excavated at Punta Chamé and delivered at Balboa.

PROPOSED NAVAL RESERVATION.

A total area of 58,625 square feet was cleared on the site of the proposed naval reservation.

HYDRAULIC EXCAVATION PLANT.

The work of the hydraulic excavation plant was continued during the month, bed rock being reached in several places. Of the coffer dams being built to form a pool for the pumping station, the one at the south end of Rio Grande was practically completed, and the one immediately in front of the central pumping station was about 50 per cent completed.

DISTRICT NO. 3—MUNICIPAL AND SANITARY IMPROVEMENTS.

The reservoirs, water mains, sewers, and oil pipe lines were maintained, and work was continued on the municipal improvements in the city of Panama.

DISTRICT NO. 4—ANCON QUARRY.

The installation of the dust screen was completed and the screen placed in operation. During the month, 3,270 cubic yards of screenings were obtained:

PERFORMANCE OF ROCK CRUSHER PLANT.

	Hours.
Length of working day	9:00
Average number of hours per day (actual working time)	6:99
	Cu. Yds.
Average amount crushed per hour of working day	262.83
Average amount crushed per working hour	338.40
Total output for the month	59,136

Relocation of Panama Railroad.

During the month, 232,715 cubic yards of material were excavated, making the total excavation at the close of the month 5,019,357 cubic yards, and 299,740 cubic yards of material were placed in embankment, making a total of 10,342,378 cubic yards for this purpose.

During the month, 915 linear feet of temporary trestle were driven. No permanent track was laid during November. The total force averaged 1,451 men.

Quartermaster's Department.

Labor—On account of the resignations of a number of boilermakers, there was a shortage of this class of labor on the Isthmus during the month. There was a surplus of all classes of unskilled labor.

Quarters—Both family and bachelor quarters at Gorgona were filled. Bachelor quarters at Gatun are nearly filled, and it may become necessary to provide some additional accommodations for the force of the gate contractor.

Material and Supplies—Active steps were undertaken to begin the reduction in the amount of stock carried on the Isthmus, and arrangements were made which, it is believed, will materially reduce the amounts ordered in the future, not only of general stock, but repair parts as well. Supplies during the month were received in 27 vessels, with cargo aggregating 36,470 tons. In addition, 2,962,118 feet, B. M. of lumber, 73,810 linear feet of piling and 68,458 cross-ties were received. One steel tug, *Miraflores*, and two steel barges were also delivered. The value of all material received was $1,083,431.24.

Subsistence Department.

The operation of the European laborers' messes, the colored laborers' kitchens and the line hotels showed a net profit of $1,999.55; the operation of the Hotel Tivoli showed a net profit of $2,771.76, and there was a net profit on restaurants and penitentiary of $132.39. The net profit on subsistence operations was $4,903.70.

Department of Civil Administration.

COURTS.

Forty-six civil and 25 criminal cases were disposed of in the Supreme and Circuit Courts, and 62 civil and 440 criminal cases in the District Courts.

DIVISION OF POSTS, CUSTOMS AND REVENUES.

Money order sales for November amounted to $434,905.55, and the fees to $1,938.85. Receipts from stamp and card sales, and newspaper postage, aggregated $6,537.72. The total collection of revenues made by the division amounted to $16,400.20, and the collection on account of court fines, costs and fees $2,077.70.

Twenty vessels entered at and 19 vessels cleared from the port of Ancon; and 22 vessels entered at and 23 vessels cleared from the port of Cristobal.

DIVISION OF POLICE AND PRISONS.

The total number of persons arrested was 471, of whom 434 were men and 37 women. Forty nationalities were represented. The total number of arrests for the month was a decrease of three from October, 29 from September and 147 from August. Sixteen convicts were committed to the penitentiary and seven were discharged, leaving 153 in confinement at the close of the month. The cost of guarding and subsisting the convicts was $2,053, and the value of their work on the Canal Zone roads $1,940.95.

DIVISION OF FIRE PROTECTION.

Two fires were reported in the Canal Zone during the month, the total loss amounting to $10.

DIVISION OF PUBLIC WORKS.

In the city of Panama the average daily consumption of water was 1,137,890 gallons, and in Colon, 974,875 gallons.

The usual inspection and maintenance work of this division was performed during the month.

DIVISION OF SCHOOLS.

The total enrollment in the white schools during the month was 978 and the average daily attendance 865, or 88 per cent of the enrollment, and in the colored schools the total enrollment was 918, and the average daily attendance 595, or 65 per cent. Thirty-six white and 24 colored teachers were employed in the division on November 30.

Department of Sanitation.

The total number of deaths from all causes among employes was 60. These were divided as follows: From disease 43, and from external cause 17, giving the annual average per thousand of 14.92 for all causes. Dividing the causes of death into disease and external causes, an annual average per thousand of 10.69 and 4.23, respectively, is shown for the month.

The annual average death rate per thousand among employes for the month of November in previous years since American occupation was as follows:

1904	14.47
1905	35.45
1906	30.61
1907	20.66
1908	11.50
1909	15.27

The annual average death rate per thousand in the cities of Panama and Colon, and the Canal Zone, including both employes and civil population, was 25.21

The annual average per thousand for the month of November among the same class of population for previous years was as follows:

1904	34.31
1905	67.80
1906	35.76
1907	28.86
1908	23.71
1909	19.14

The increase in infant mortality in Panama continued, about 30 per cent of the total deaths in that city being infants under one year of age.

Segregating the whites from the blacks, the annual average death rate per thousand from disease among employes was: Whites, 5.55, blacks, 12.59, giving a general average of 10.69. For the same month during 1908, the annual average death rate per thousand from disease was: Whites, 8.51, blacks, 8.68, giving a general average of 8.63; and for the same month during 1909: Whites, 5.88; blacks, 11.31, giving a general average of 10.26.

Among employes during November, 1910, deaths from the principal diseases were as follows: Malarial fever, 3; hæmoglobinuric fever, 1; pneumonia, 11; tuberculosis, 7; dysentery, 1; nephritis, 2, leaving a balance of 18 from other diseases, there being no deaths during the month from typhoid fever.

No cases of yellow fever, smallpox, or plague were brought to, or originated on the Isthmus during the month.

Respectfully,
GEO. W. GOETHALS,
Chairman and Chief Engineer.

Obituary.

J. D. Evans, a clerk in the employ of the Panama Railroad Company, living at Cristobal, died at Colon Hospital on December 15, after an illness of a little over two weeks. He was 23 years of age, single, was born at Memphis, Tenn., and had been on the Isthmus 18 months. He is survived by his father and mother, Mr. and Mrs. J. D. Evans, living at Las Cascadas, and by his brother, W. A. Evans, Jr., living at Empire. The body will be shipped to the States on December 22 for interment.

Mrs. Effie Morris Woodburn died at Ancon Hospital on December 7, after an illness of 11 days. She had been on the Isthmus six months, living at Empire with her daughter and son-in-law, Mr. and Mrs. A. L. Zacharias. She was 42 years of age, and had come to the Isthmus from Illinois.

Personal.

Col. J. P. Fyffe sailed for the States on his annual leave of absence on the *Cristobal* on December 16.

Odd Fellows.

A special train will be run from Paraiso to Panama and return for the meeting of Pacific Lodge, No. 4, I. O. O. F., at Ancon, on Thursday night, December 22. The train leaves Paraiso at 7 p. m., Pedro Miguel at 7.05, and Corozal at 7.20. Returning, it will leave Panama about 10.30 p. m. All Odd Fellows living at the above mentioned points are requested to attend this meeting.

Fatal Track Accident at Gorgona.

James F. Davis, an American, was run over and instantly killed near Gorgona shops, at about 2.15 p. m., on Saturday, December 17, by I. C. C. locomotive No. 614, traveling south with a train of empty dump cars. Richard T. Crean, another American, who was with Davis at the time, received a number of injuries and was removed to Ancon Hospital. He will probably recover. The men were walking along the northbound track, when observing a train approaching on it, stepped over to the southbound track, directly in the way of the other train. Davis was 29 years old, unmarried, and was first employed in the Canal service on November 9, 1907. He was last employed as a car repairer at Gorgona shops, his services there terminating on November 17, 1910. A brother, J. L. Davis, resides at 826 Young street, Augusta, Ga. Crean arrived on the Isthmus on September 25, 1910, and was employed as a boilermaker at Gorgona shops from October 26 to December 16, 1910.

Fatally Burned.

Mrs. Smith, wife of Richard C. Smith, a pipefitter employed in the Mechanical Department, who resided in house No. 46 at Paraiso, was fatally burned on Saturday, December 17, in an explosion caused by pouring into a stove wood alcohol, which she had mistaken for kerosene. She was taken to Ancon Hospital, where she died about 3 a. m., Sunday morning, December 18. She was 34 years old, a native of Virginia, and had lived in Washington prior to Mr. Smith's departure for the Isthmus in February, 1907. Three children survive her, two being on the Isthmus and one in the States.

Baseball.

In a practice game played at the Ancon park on Sunday forenoon, December 18, between the Ancon and Gorgona baseball teams, the home nine won by a margin of one run. Each club tried out three of its pitchers. The score by innings follows:

Gorgona	1	0	0	0	1	0	0	1	0	3
Ancon	0	0	0	0	0	2	0	2	x	4

A game of baseball will be played at the Ancon park on Sunday, December 25, between the Ancon team and a nine from the U. S. S. *Princeton*, now in Panama harbor. The game will be called at 10 a. m.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

The standings in the second billiard tournament, handicap, follows:

Name.	Won.	Lost.	Handicap.
Bayne	1	0	100
Case	0	2	45
Conlon	1	1	100
Dubois	1	1	100
French	1	0	55
Hall	0	1	45
Hepler	1	0	45
Silver	1	1	81
Soderberg	0	1	45
Thompson	1	0	86
Clark	0	0	45

The high scores in duckpins on Friday night were: Hill, 136, 101; McIlvaine, 109; Hurst, 101; Cornthwaite, 101.

Scores of 222 in big pins were made by Cohen and Mengel. Sickler is the winner of the Putnam medal. Sickler and Cohen tied for games each winning 8 and losing 2. Each then rolled one ball which gave the medal to Mr. Sickler.

Gorgona plays its last game of basketball at Culebra on Saturday evening.

EMPIRE.

The "Pen-Pushers" beat the Nut-Splitters" two out of three games on the bowling alleys on December 17. Score:

"Pen-Pushers."			
Brown	193	181	145
Bachelor	95		
Goolsby	153	143	184
Hobbs	119	222	155
Gorham	141	156	190
Davis		144	170
Total	701	846	844

"Nut-Splitters."			
Edwards	160	210	171
Parkes	116	135	150
Giavelli	166	206	146
Argue	154	123	141
Snyder	146	138	153
Total	742	812	761

The following 200, and over, scores were rolled during the week: Yount, 200; Gustavson, 208; Koperski, 207; Hobbs, 201; Davis, 203; Gorham, 213; Goolsby, 209.

Gatun defeated Empire in a basketball game on December 17. The following players participated:

Gatun—Huber, R. Porter, forwards; C. Porter, center; Shell, Connor, guards.

Empire—Laylander, Eason, forwards; Lyon, center; McCullough, Campbell, guards.

The musical section has received an invitation to repeat the recent sacred concert at the Gatun clubhouse.

GORGONA.

The discussion club "smoker" held on Thursday, December 18, was well attended. The following officers were elected to preside over club discussions: Chairman, C. Patterson; vice-chairman, H. Otis; secretary, F. G. Swanson; directors, E. L. Emery, Ed. Mostyn. A reference library of 40 volumes has been given to the club by the following members: Ed. Mostyn, James Casey, Wm. E. Dickson, Robt. Varenkamp, Fred'k Einerman, C. Patterson, C. S. Boyer, M. J. Lynch, Geo. Lowe, Chas. H. Beetham.

The following 200, and over, scores were bowled during the week ending December 17: Varenkamp, 234; W. J. Humphrey, 221; Jess T. Hopkins, 201; Jas. Stewart, 200; Mrs. Lowe, 201. High average, M. Varenkamp, 203.

GATUN.

The "smoker" held on Saturday night brought out 250 men. Cigars, punch, and sandwiches were served. The program was as follows: Selection, Arnold's orchestra; recitation, H. A. Guerrard; piano solo, Melville Booz; tenor solo, G. R. D. Kramer; patriotic selection, Arnold's orchestra; monologue, H. A. Guerrard; baritone solo, Wm. A. Booz; poetry, A. H. Stevenson; yodel, R. King; Dutch comedy, Robinson and Richardson; Spanish dancing, Señor and Señora Gamonet; farewell impersonations, H. A. Guerrard.

Sixty-five members have been added since the membership campaign was begun, making a total of 445. The date set for 500 is February 1. Chas. E. Wood is chairman of the committee. An electric device announcing the increase of the membership from time to time has been placed over the entrance of the building. This device is the invention of Fred Huber, a member of the committee.

Several new members have been added to the Gatun glee club. With the exception of this week, rehearsals will be held every Thursday night at 8 o'clock. A. B. Dickson, for several years a musician in New York City, is director.

The mechanical drawing class has selected Wednesday as its regular meeting night. R. E. Chatfield of Yale Sheffield scientific school is the teacher.

This week, Thursday night, Cristobal plays basketball at Gatun. There will be music by an orchestra. If Cristobal wins, the championship will be decided. C. C. Carr and C. A. Christopherson will act as referees.

The pool match between Mr. Hirsch of Empire and Mr. DePoorter of Gatun was played on Saturday night before a large audience, Mr. DePoorter winning by a score of 100 to 77. A return match for the championship of the Isthmus will be played in the near future.

CRISTOBAL.

The members' "smoker" on Friday night was well attended. The program was as follows: Monologue, Mr. Sexton; bugle calls, Mr. Yeiser; solo, Mr. Jamison; sketch, "Firestein and Bernstine," Messrs. Manley and DeLong; musical reading, "What a Little Smoke Will Do," Mr Weston; solo, Mr. Bennyhoff; drawings, Mr. Glick; solo, Mr. Weston; three numbers by Señores Enriquez and Gamonet, and Señora Montenegro.

A business meeting of the chess and checker club is called for Tuesday, December 27, at 8 p. m., to elect officers for 1911.

The 200, and over, bowling scores for the week ending December 17, are as follows: Barrett, 212, 223, 204; Blackburn, 213; Bullard, 209, 227, 208, 206, 220, 225, 203, 200; Collins, 206; Howard, 206; Louch, 220, 208, 200, 201; Rigney, 212; Simms, 216; Weston, 207.

Thursday night, December 22, a special train will be run from the Cristobal station to Gatun and return, for the benefit of those wishing to witness the closing game of the basketball league. The Cristobal bowling team will bowl Gatun on the same evening. There will no charge for fare to members, and members accompanied by ladies. Fare for nonmembers, 35 cents.

Cristobal's basketball percentage is 1000 for seven games played.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, December 17, 1910. All heights are in feet above mean sea level.

DAY AND DATE	STATION.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun. Dec. 11	130.0	95.9	49.8	20.6	19.8
Mon. Dec. 12	129.4	95.5	49.2	20.8	19.6
Tues. Dec. 13	136.2	100.0	55.0	23.0	20.4
Wed. Dec. 14	129.3	95.5	50.0	23.0	20.6
Thurs. Dec. 15	140.0	102.2	57.4	23.6	20.6
Fri. Dec. 16	133.4	97.9	52.1	22.8	20.6
Sat. Dec. 17	130.0	96.2	51.9	21.9	20.3
Height of low water	125.0	92.0	46.0		

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending December 28, 1910.(75th meridian time):

DATE.	High.	Low.	High.	Low.	High.
	A. M.	A. M.	A. M.	P. M.	P. M.
December 22	......	1.58	7.59	2.21	8.33
December 23	......	2.54	8.57	3.17	9.30
December 24	......	3.54	10.01	4.17	10.32
December 25	......	4.57	11.11	5.18	11.34
			P. M.		
December 26	......	6.00	12.23	6.22	......
December 27	12.35	6.58	1.27	7.18	......
December 28	1.28	7.48	2.18	8.08	......

Married.

MASON-JOHNSON—At Deadwood, Texas, on Friday morning, November 18, at the bride's home, Beulah Johnson to Chauncey J. Mason of Fort Wayne, Ind., the Rev. Mr. Lee of Deadwood officiating. Canal Zone residence, Las Cascadas.

LAWLOR-KEYS—At 8 p. m., on December 10, at the Roman Catholic Chapel in Balboa, Ida Keys of Greenville, S. C., to William A. Lawlor of Catlett, Va., the Rev. H. A. Pouget officiating. Canal Zone residence, Culebra.

HATHAWAY-McCULLOUGH—On Thursday, December 15, at the residence of Mr. W. M. Wood, Empire, Miss Elsie Hannah McCullough to Mr. Milton Smith Hathaway, the Rev. W. W. Gray officiating. Canal Zone residence, Empire.

Rainfall from December 1 to 17, Inclusive.

MIDNIGHT TO MIDNIGHT.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	1.86	2	9.08
Balboa	2.00	10	7.69
*Miraflores	2.03	3	8.17
Pedro Miguel	2.54	3	9.21
Rio Grande	2.41	1	10.24
Central Section—			
Culebra	2.95	1	11.09
*Camacho	3.48	1	10.97
Empire	1.71	4	8.56
Gamboa	2.57	4	12.11
Alhajuela	2.63	6	15.04
*El Vigia	3.55	3	15.14
*Gorgona	3.40	3	12.92
San Pablo	3.24	3	14.50
Tabernilla	2.47	3	14.05
Bohio	3.02	4	13.34
*Monte Lirio	2.64	4	12.50
Atlantic Section—			
Gatun	3.09	4	11.24
*Brazos Brook	2.82	4	12.20
Cristobal	2.51	4	10.86
Porto Bello	6.01	15	†15.57
*Nombre de Dios	3.72	4	18.51

*Standard gage. Readings at 5 p. m. daily. Automatic rain gage at unstarred stations. Values midnight to midnight.

†To 5 p. m., December 16.

Family Quarters.

Applications for married quarters were on file on December 1, as follows:

PLACE.	No. 1 List.	No. 2 List.
Ancon	4 (3)	24
Ancon Hospital	....	4
Balboa	....	38 (9)
Corozal	....	37 (5)
Cristobal	....	133
Culebra	3	6
Empire	6	34
Gatun	1	150 (60)
Gorgona	25 (8)	133 (33)
Las Cascadas-Bas Obispo	11	11 (5)
Miraflores	....	2
Pedro Miguel-Paraiso	8	54 (8)
Porto Bello	2	19
Tabernilla	....	....
Toro Point	1	2
Total	61 (11)	647 (120)

The figures in parentheses show the number of applicants already occupying regular or nonhousekeeping family quarters at stations, other than those at which applications are filed.

The following vessels arrived at and departed from the port of Balboa during the week ending December 17, 1910:

Arrivals—December 7, *Cavalier*, from Guayaquil; December 11, *Peru* (P. M. S. S. Co.), from San Francisco; December 12, *Rupanco*, from Buenaventura and Tumaco; December 13, *Peru* (P. S. N. Co.), from Valparaiso; December 14, *Aztec*, from San Francisco; December 17, *Melville Dollar*, from San Francisco.

Departures—December 11, *Cavalier*, to Guayaquil; *Newport*, to San Francisco; *Manavi*, to Buenaventura and Tumaco; December 12, *Ucayali*, to Callao; December 15, *Limari*, to Valparaiso.

CLASSIFIED EXPENDITURES.

A statement of classified expenditures of the Isthmian Canal Commission to October 31, 1910, follows:

PERIOD.	Department of Civil Administration.	Department of Sanitation.	Department of Construction and Engineering.	General Items.	Total.
Total to June 30, 1910	$3,427,090.29	$9,673,539.28	$69,622,561.42	$78,022,606.10	$160,745,797.09
Total, fiscal year 1910	709,351.37	1,803,040.95	26,300,167.05	2,863,088.83	31,675,648.20
July, 1910	58,474.88	156,006.64	2,216,849.78	280,015.85	2,711,347.15
August, 1910	63,887.05	164,220.65	2,348,777.07	336,961.35	2,913,846.12
September, 1910	60,586.46	153,433.27	2,516,814.41	236,170.76	2,967,004.90
October, 1910	37,250.26	146,587.47	2,565,042.28	295,537.33	3,044,417.34
Total	$4,356,640.31	$12,096,828.26	$105,570,212.01	$82,034,380.22	$204,058,060.80

OFFICIAL CIRCULARS.

Christmas and New Year's Holidays.

CULEBRA, C. Z., December 19, 1910.

CIRCULAR, No. 363:

As Christmas Day, December 25, 1910, and New Year's Day, January 1, 1911, fall on Sunday, Monday, December 26, and January 2, will be observed as holidays in the Canal Zone, and as far as practicable, all public business will be suspended on those days.

GEO. W. GOETHALS, *Chairman.*

Patterns Sent to Shops.

CULEBRA, C. Z., December 17, 1910.

CIRCULAR No. 197-H:

An article sent to a shop for use as a manufacturing model or pattern will be returned upon the completion of the order, unless it is specifically stated in the work request that the article should not be returned.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Nozzleman.

CULEBRA, C. Z., December 17, 1910.

CIRCULAR No. 299-I:

A maximum rate of $150 a month is authorized for nozzlemen employed on hydraulic excavation work.

GEO. W. GOETHALS.
Chairman and Chief Engineer.

Acting Chief of Police.

ANCON, C. Z., December 15, 1910.

CIRCULAR No. 101:

During the absence on leave of Colonel J. P. Fyffe, Chief of Police, Lieutenant C. W. Barber is designated Acting Chief of Police, effective December 16, 1910.

M. H. THATCHER,
Head of Department of Civil Administration.

Regulations Governing Public Markets of the Canal Zone.

ANCON, C. Z., December 16, 1910.

1. The markets are provided as places for the sale to residents of the Canal Zone of meat, fish, vegetables, fruits, and other articles of food, and the space in them will not be leased for any other purpose; provided that, in the discretion of the Superintendent of Public Works, not more than one-half of the space available in a public market may be leased for the sale of dry goods, groceries, notions, cigars, tobacco, soda water, and other soft drinks, and for use as lunch counters and news stands where no application has been received for the leasing of the space for the sale of food products, but the Superintendent of Public Works shall have authority to cancel the assignment of space leased for the purposes enumerated in this proviso, should application be made for such space for use for the sale of food products; provided further, that when space is leased for the sale of dry goods, groceries, notions, cigars, tobacco, soda water, and other soft drinks, and for use as lunch counters and news stands, the rate of rental shall be twenty (20) per cent, in advance, over that charged when used for the sale of food products.

2. All assignments of space shall be for the period of one month, beginning on the 16th day thereof, and ending on the 15th day of the succeeding month, except that assignments made after the first of any month shall be for a half month, counting from the first of the month, and shall be paid for at one-half the monthly rate; and except also, that this shall not apply to tables and other similar space rented by the day and so indicated on the posted plat.

3. There shall be posted in a conspicuous place in each market a plat signed by the Superintendent of Public Works and Collector of Revenues, showing the sizes and rates of rental of the various stalls and other divisions of space.

4. Application for assignment of space shall be made to the market inspector. If approved, the inspector will issue an assignment, indicating the space assigned, the period of assignment, the purpose for which it is to be used, and the amount of rental to be paid to the Deputy Collector of Revenues. Upon return of the assignment, with the exhibition of the Deputy Collector's receipt, possession of the space will be given.

5. Not more than one stall or other division of space in each market will be assigned to any one person, except by special authority of the Superintendent or Assistant Superintendent of Public Works.

6. Lessees of space will not be permitted to make any changes in the arrangement of partitions, shelves, etc. Requests for desired changes will be made of the market inspector. If approved by him, he will secure an estimate of the cost of the work, and upon deposit with him by the lessee of the amount of the estimate, the work will be done by the Isthmian Canal Commission. The excess of the deposit, if any, over the cost of the work, will be returned to the lessee.

7. All stalls and other divisions of space shall be thoroughly swept at the close of each day. Special attention shall be given to the spaces used for the sale of meat and fish; the counters, blocks, etc., used in them shall be scrubbed with soap and water as often as necessary to keep them in good sanitary condition. All decayed fruits and vegetables, and other dirt and refuse shall be removed and deposited in the sanitary cans provided for that purpose. All articles in bulk shall be kept in bags, barrels, or boxes, so that they can be moved in cleaning. Lessees shall be responsible for the cleanly and sanitary condition of the space assigned them and shall carry out such special instructions to that end as may be given them by the market inspector or his authorized assistant. The market inspector will be responsible for the cleanly and sanitary condition of the market outside of stalls and other space assigned to lessees.

8. Lounging or loitering around the market will not be permitted. Lessees are expected to enforce this prohibition as to the space assigned them.

9. The hour for opening and closing each market shall be fixed by the Superintendent of Public Works, and posted in a conspicuous place in the market.

10. Any complaint respecting a market should be addressed to the Superintendent of Public Works, Ancon, C. Z.

11. Any violation of these regulations by a lessee shall be considered sufficient cause for the cancellation of his assignment, but such cancellation shall not relieve the offending person from prosecution under any penal law or ordinance he may violate.

12. These regulations shall be posted in a conspicuous place in each market.

J. J. REIDY,
Acting Superintendent of Public Works.

Approved: M. H. THATCHER,
Head of the Department of Civil Administration.

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal and Colon during the week ending December 17, 1910:

Prinz Joachim, December 12, from New York, with 16 bales paper for stock.

Abangarez, December 15, from New Orleans, with 307,244 feet yellow pine lumber, 24 pieces gears and pinions, 6 cases castings for Atlantic Division; 5 barrels brake shoes, 950 pieces castings for Mechanical Division; 284 bales straw, 2,416 bales hay, 16 crates slop boxes, 83 rolls cotton duck, 2,000 crates fire brick for stock.

Zacapa, December 15, from New York, with 36 tons lock construction material for Pacific Division; 18 cases paper, 400 cases linseed oil for stock.

Panama, December 16, from New York, with 10 cases electrical machinery for Atlantic Division; 32 carbon diamonds, 84 cases copper tubes, 60 pieces pipe for Pacific Division; 26 pigs tin, 6 cases electrical material for Mechanical Division; 65 cases drugs and sundries for Sanitary Department; 5 cases insulating tape, 15 cases pump parts, 16 cases tackle blocks, 88 cases caustic soda, 300 sacks wood plugs, 47 coils insulated copper wire, 9 reels wire rope for stock; and a miscellaneous cargo, the whole consisting of 1,553 packages, weighing 137 tons.

Pacific Division Sand Service.

A report of sand cars loaded and shipped from Balboa during the month of November, follows:

DESTINATION.	Number of Cars.	Cubic Yards.
Pacific Division	2,571	38,605
Central Division	28	420
Atlantic Division	3	75
Quartermaster's Department	1	25
Panama railroad	3	75
Total	2,606	39,200

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Culebra, C. Z., on Sunday, December 25, 1910, at 5.45 p. m. The program follows:

1 March—*Midshipman*	Laurendeau
2 Selection—*The Chocolate Soldier*	Straus
3 Flower Song—*Hearts and Flowers*	Tobani
4 Overture—*Poet and Peasant*	Suppe
5 Waltz—*Bad'ner Mad'ln*	Komzak
6 Medley Selection—*Popular Hits*	Alford
7 Song—*The Rosary*	Nevin
8 Intermezzo—*Silver Bell*	Wenrich
9 March—*Columbia Phonograph Co*	Burton

CHAS. E. JENNINGS, *Musical Director.*

The next concert will be given at Gorgona on Sunday, January 1, 1911, at 6 p. m.

LOST—On Sunday evening at Bas Obispo station, or on forward first-class passenger coach on train No. 28, a lady's silver card case containing cards. Reward will be given. C. NIXON, Cristobal, C. Z.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Allianca	P. R. R.	Friday	Dec. 16
Colon	P. R. R.	Thursday	Dec. 22
Advance	P. R. R.	Thursday	Dec. 29
Panama	P. R. R.	Wednesday	Jan. 4
Allianca	P. R. R.	Tuesday	Jan. 10
Colon	P. R. R.	Monday	Jan. 16
Advance	P. R. R.	Saturday	Jan. 21
Panama	P. R. R.	Saturday	Jan. 28
Allianca	P. R. R.	Saturday	Feb. 4
Colon	P. R. R.	Friday	Feb. 10

CRISTOBAL TO NEW YORK.

Panama	P. R. R.	Thursday	Dec. 22
Allianca	P. R. R.	Wednesday	Dec. 28
Colon	P. R. R.	Tuesday	Jan. 3
Advance	P. R. R.	Tuesday	Jan. 10
Panama	P. R. R.	Monday	Jan. 16
Allianca	P. R. R.	Monday	Jan. 23
Colon	P. R. R.	Sunday	Jan. 29
Advance	P. R. R.	Friday	Feb. 3
Panama	P. R. R.	Friday	Feb. 10
Allianca	P. R. R.	Thursday	Feb. 16

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 11th and 28th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Almirante	U. F. C.	Thursday	Dec. 15
Prinz Aug. Wilhelm	H.-A.	Saturday	Dec. 17
Santa Marta	U. F. C.	Thursday	Dec. 22
Sarnia	H.-A.	Saturday	Dec. 24
Tagus	R.-M.	Saturday	Dec. 24
Metapan	U. F. C.	Thursday	Dec. 29
Prinz Joachim	H.-A.	Saturday	Dec. 31
Zacapa	U. F. C.	Thursday	Jan. 5
Oruba	R.-M.	Saturday	Jan. 7
Almirante	U. F. C.	Thursday	Jan. 12
Santa Marta	U. F. C.	Thursday	Jan. 19
Magdalena	R.-M.	Saturday	Jan. 21

COLON TO NEW YORK.

Zacapa	U. F. C.	Thursday	Dec. 22
Oruba	R.-M.	Monday	Dec. 26
Sibiria	H.-A.	Tuesday	Dec. 27
Almirante	U. F. C.	Saturday	Dec. 29
Prinz Aug. Wilhelm	H.-A.	Tuesday	Jan. 3
Santa Marta	U. F. C.	Thursday	Jan. 5
Magdalena	R.-M.	Monday	Jan. 9
Sarnia	H.-A.	Tuesday	Jan. 10
Metapan	U. F. C.	Thursday	Jan. 12
Zacapa	U. F C.	Thursday	Jan. 19

NEW ORLEANS TO COLON.

Atenas	U. F. C.	Saturday	Dec. 17
Cartago	U. F. C.	Wednesday	Dec. 21
Turrialba	U. F. C.	Saturday	Dec. 24
Parismina	U. F. C.	Wednesday	Dec. 28
Abangarez	U. F. C.	Saturday	Dec. 31
Heredia	U. F. C.	Wednesday	Jan. 4
Atenas	U. F. C.	Saturday	Jan. 7

COLON TO NEW ORLEANS.

Heredia	U. F. C.	Thursday	Dec. 22
Abangarez	U. F. C.	Thursday	Dec. 22
Atenas	U. F. C.	Thursday	Dec. 29
Cartago	U. F. C.	Thursday	Dec. 29
Turrialba	U. F. C.	Thursday	Jan. 5
Abangarez	U. F. C.	Thursday	Jan. 12
Parismina	U. F. C.	Thursday	Jan. 5

COLON TO BARBADOS, CALLING AT TRINIDAD.

Tagus	R.-M.	Tuesday	Jan. 3
Oruba	R.-M.	Tuesday	Jan. 17

The next sailing of the Leyland Line will be as follows: *Jamaican*, on or about December 28, for New Orleans, via Kingston, Ja.

Hamburg-American steamers leave for New York every Tuesday at 10 a. m., and for Port Limon every Tuesday or Wednesday via Bocas del Toro or Puerto Colombia. Steamships *Sarnia* and *Sibiria* make connections at Kingston with the *Altai* and *Allegany* of the same line for Santiago and Havana.

Royal Mail steamers leave for New York on alternate Mondays at 5 p. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursday at 3 p. m.; for New Orleans via Port Limon and Puerto Barrios on Thursday at 6 p. m., and for New York on Thursday at 11 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3rd and 20th of each month.

CANAL RECORD

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The Canal Record

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Address all Communications
THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Slide at Las Cascadas.

The slide on the east bank of the Canal, opposite Las Cascadas, which first began to give trouble in April, 1908 and increased in area in July, 1909, broke still further to the south and east on December 4, 1910. Before the material from the break of December 4 had been gotten out of the way, a much larger break occurred on December 13. The moving material, consisting of some hard rock, but principally a layer of pure red clay, carried away all tracks on the east half of the Canal and extended slightly beyond the axis of the Canal, blocking the pioneer drainage cut. Up to the date when the slide of December 13 occurred, there had been excavated from the three previous slides in this locality 179,148 cubic yards, and there still remained in motion on December 14, due to slides of December 4 and 13th, 311,634 cubic yards. The area of the slide of April, 1908, was 1.12 acres, which, when augmented by the slide of July, 1909, aggregated 1.38 acres The slide of December 4 increased this area to 2.70 acres, and that of December 13, gave a total area of 7.6 acres.

From the configuration of the surface, it is quite possible that there may be a further break in the future, adding 150,000 cubic yards to the quantity already mentioned, and increasing the total area affected by 2½ acres. The slope of the surface upon which the clay is sliding is about one vertical to six horizontal. Four steam shovels are now at work on the slide, which should be entirely removed by about the end of March. Beyond the possible future addition of 150,000 cubic yards, already mentioned, the configuration of the ground indicates that with the removal of the present slide and this possible addition, no further trouble will be experienced in this vicinity.

Earthquake Disturbances.

Two earthquake shocks were noticeable on the Isthmus on December 20 and 21. The record on the seismic instruments at Ancon observatory shows that the shock of December 20 began at 6.09 a. m. and lasted 23 minutes, the direction registered being from the north, and the distance calculated at about 225 miles. The disturbance of December 21 began at 5.25 a. m. and ended at 6.03 a m.; the distance indicated was about 225 miles, and the direction was also northerly. These are the largest records of any made since the instruments were installed about two years ago, not excepting even those of the Cartago earthquake. The assistant manager of the United Fruit Company at Bocas del Toro reported a disturbance early in the morning of December 21, lasting from 10 to 15 seconds, but no damage was done, other than the shattering of a few plates.

Closing of Relocated Line.

The relocated line of the Panama railroad between Gatun and Gamboa, which was used during the recent high water for main line traffic, will be closed between January 1 and July 1. This will make it possible to carry on the filling without interference from main line traffic and from excursions. The completion of the fills at various points make a change of track layout necessary.

Excavation in Culebra District.

On December 20th, 17 shovels working in the Culebra construction district of the Central Division, excavated 27,199 cubic yards of rock and earth during the working day of eight hours, an average per shovel of 1,600 cubic yards. The shovels were under steam 136 hours and were actually at work 90 hours and 5 minutes, the principal delay being caused by waiting for cars.

Building Operations.

The new Zone schoolhouse at Cruces, the native town on the Chagres River above Gamboa, will be framed at Bas Obispo, transported from there on a car to the dynamite storehouse near the Gamboa bridge, thence moved for a distance of about 150 feet to the river edge, where it will be loaded on a raft, built for the purpose, and towed up the stream to the settlement. It will be 24 by 36 feet in size, will have accommodations for over 50 pupils, and will be located near the village church, now the only frame building in the place. The original church, erected in the early days of the settlement, was constructed of stone and part of its walls still stand, practically enclosing the wooden structure built subsequently. As the only available building in town, the church has also been used for school purposes.

The breakwater settlement at Toro Point will be provided with postal facilities, and a post-office building, containing two rooms, one for the postmaster's use, and the other for the public, has been about completed by the Constructing Quartermaster's forces. It will be 16 by 16 feet in size and will be situated near the dispensary.

A building has been erected at Gorgona shops to house the oxy-acetylene welding plant recently received. It is of frame construction, 20 by 30 feet in size, one story high, and contains one room. It will be completed about January 1, 1911.

Plans have been prepared in the Constructing Quartermaster's office for a small corral building at Miraflores. It will be situated on the side of the hill, convenient to the railroad, and also to the wagon road extending from the station to the commissary. Besides three stalls, there will be room for storing feed, and sleeping quarters for the man in charge.

Steel Barges for Atlantic Division.

Four 600-cubic yard sea going steel barges have recently been added to the transportation fleet of the Atlantic Division, completing an order placed some months ago with the Ellicott Machinery Company of Baltimore. They were towed through Chesapeake Bay to Newport News, Va., where they were loaded with coal and started on their sea voyage, two at a time, in tow of the tug *M. E. Luckenbach.* The first two barges arrived at Cristobal on November 15, and the remaining two on December 7. They will be known as barges *Nos. 15*, *16*, *17* and *18*, and will be placed in service transporting rock and sand from Porto Bello and Nombre de Dios to Gatun docks, although it is intended to use them later in carrying large rock from the Porto Bello quarry to the Colon breakwaters.

The barges have a length over all of 168 feet, which make them 12 feet longer than the other 600-cubic yard barges in the Atlantic Division service. Their other dimensions, however—breadth, 35 feet; height amidship, 12 feet—are practically the same. Each barge contains five watertight tranverse bulkheads, and two watertight longitudinal bulkheads, the latter forming the sides of the cargo enclosure. The deck house in the after part is made of 15-pound steel plates, and is fitted with watertight doors and heavy glass sidelights. The quarters for the crews are furnished with standee bunks, clothes lockers and other conveniences; and are kept supplied with fresh air by means of funnel ventilators extending above deck in the same manner as the furnace room ventilators on steamships, which is a new feature in connection with the barges in the Isthmian service.

Each barge is equipped with a boiler of the single Scotch marine type, with an outside diameter of eight feet, and a working pressure of 110 pounds to the square inch, containing a Morrison corrugated iron suspension furnace, 42 inches in diameter, fitted for burning oil. The engines are of the double cylinder type, 10 inches in diameter, and have a 10-inch stroke. They are used solely for operating the towing machines, one of which is installed on each barge. These machines, manufactured by the American Ship Windlass Company, are similar in most respects to those now in use on other barges in the Isthmian service, and have an automatic winding

NOTES OF PROGRESS.

(Continued.)

device with sufficient capacity to stow 1,500 feet of 1¼-inch steel wire hawser. Each barge is also provided with two 1,600-pound and one 500-pound stockless anchors, and a 16-foot metallic life boat.

Experience has shown that there is a great deal of wear to the bottom plates in the cargo enclosures on barges in the rock and sand service, due to the operation of the excavating buckets, and to minimize the repair cost, the floor of the cargo bin in each barge will be covered with a layer of concrete three inches in thickness. Sounding wells for water and oil tanks, and filling pipes for water tanks will also be added.

Gatun Dam Spillway.

Concrete was placed in the spillway of Gatun Dam during the week ending December 24, as follows:

Date.	Concrete Laid.	Hours worked.	No. Mixers.
	Cu. Yds.		
December 19	248	8:00	1
December 20	328	9:00	2
December 21	206	8:00	2
December 22	280	9:00	1
December 23	246	7:00	1
December 24	278	6:00	1
Total	1,586	47:00	....
Previously reported	111,984		
Grand total	113,570		

The concrete figures for the spillway, for the week ending December 17, have been corrected to read as follows: December 12th, 300 cubic yards; December 13th, 278 cubic yards; December 14th, 294 cubic yards; December 15th, 210 cubic yards; December 16th, 160 cubic yards; December 17th, 222 cubic yards. Total, 1,464 cubic yards.

Pacific Entrance Dredges.

Two of the Pacific Division dredges, the *Marmot* and the *Mole*, are to be equipped with new ladders, one of which has been received. They were manufactured by Lobnitz and Company of Renfrew, Scotland, the builders of the dredges, and are about five feet longer and of a much heavier type of construction than the ones with which the vessels are now fitted. With the new ladders, which are 82 feet long from the center of the hanging shaft to the center of the tumbler shaft, it will be possible to excavate to a depth of 45 feet below low tide.

The dredge *Marmot* is still at work widening and deepening the channel to the proposed new Panama railroad docks. It is excavating as it proceeds to a depth of 31 feet at low tide, and to the required bottom width of 450 feet. The required depth is 40 feet, and the suction dredge *Culebra* will be set at work to complete the channel after the *Marmot* has finished the primary cut. The bank in which the ladder dredge is working is composed wholly of mud and sand, with a total absence of rock even at the required bottom depth. At the rate of progress it has made so far during the month of December, it is expected that the *Marmot* will break all records for the output of a ladder dredge on the Isthmus for one month.

The new tug *Miraflores* has taken the place of the tug *La Boca* in the sand towing service between Punta Chamé and the Balboa sand dock. The latter vessel has been given a thorough overhauling, and was ready for service again on Friday, December 23. It will relieve the tug *Cocoli* in hauling the mud barges out to sea, and the *Cocoli*, in turn, will go on the shipways to receive a general overhauling, the first in two or three years.

The dipper dredge *Cardenas* is on the shipways and is being fitted with a new boom and "A" frame. The work will be concluded early in January.

Of the various units of floating equipment placed in service in the Canal work in the Pacific entrance since the beginning of operations under the American engineers, all are still in commission with the single exception of an old French clapet, which was condemned a short time ago and beached in the marine "graveyard" on the mainland opposite the Canal entrance. The vessel required extensive repairs, and to place it in condition would cost more than it was worth.

Information has been received that the strike of the boilermakers in Scotland, and other parts of the United Kingdom, has been adjusted, and that the men have returned to work. This will enable resumption of the manufacture of the boilers for the new ladder dredge *Corozal*, now under construction at Renfrew, Scotland. It is not believed that the temporary interruption will cause any delay in completing the dredge within the contract period.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Concrete work in Gatun Locks is over 48 per cent completed, 987,218 cubic yards, out of a total of 2,085,000, having been placed at the close of work on December 24.

A statement of the amount of concrete placed in the locks each day for the week ending December 24, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
December 19	1,978	32:50	6	818	11:40	2	353	3,149
December 20	1,764	30:55	6	942	11:40	2	358¼	3,064¼
December 21	1,853	31:35	6	832	11:40	2	248¼	2,933¼
December 22	1,657	29:14	6	948	11:40	2	293¼	2,898¼
December 23	1,990	29:30	6	816	11:40	2	312¾	3,118¾
December 24	1,692	28:07	7	802	10:40	2	281¼	2,775¼
Total	10,934	182:11	......	5,158	69:00	......	1,846¾	17,938¾
Previously reported	....	....	......	....	....	......	....	969,279
Grand total	....	....	......	....	....	......	....	987,217¾

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is 56 per cent completed, 470,994 cubic yards, out of a total of 837,400, having been placed at the close of work on Saturday, December 24. The record of concrete laid during each of the six 8-hour working days of last week, follows:

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant. 2-cubic yard mixers.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
December 19	1,108	14:00	2	678	15:50	3	48	1,834
December 20	1,200	16:00	2	584	13:30	3	....	1,784
December 21	1,376	17:00	2	506	10:67	3	....	1,882
December 22	1,298	16:83	3	452	10:00	2	....	1,750
December 23	1,532	23:00	4	478	11:83	3	39	2,049
December 24	1,312	20:00	4	280	8:00	2	8	1,600
Total	7,826	106:83	2.84	2,978	69:30	2.67	95	10,899
Previously reported	....	....	......	....	....	......	3,942	460,095
Grand total	....	....	......	....	....	......	4,037	470,994

MIRAFLORES LOCKS.

The record of concrete placed in the upper lock at Miraflores, during the six 8-hour working days of the week ending December 24, follows:

Date.	Auxiliary Plant.										Total.
	2-cubic yard mixers.			¾-cubic yard mixers.			¾-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
Dec. 19	616	10:00	2	271	15:50	2	56	7:00	1	21	964
Dec. 20	648	10:50	2	229	13:50	3	136	7:50	1	5	1,018
Dec. 21	618	10:00	2	139	9:00	1	54	4:50	1	15	826
Dec. 22	412	7:50	2	78	6:50	1	....	....	......	10	500
Dec. 23	350	6:00	2	259	13:50	2	52	4:00	1	25	686
Dec. 24	440	6:25	2	196	18:00	2	....	....	......	5	641
Total	3,084	50:25	2	1,172	76:00	1.83	298	23:00	.67	81	4,635
Previously reported	....	....	......	....	....	......	....	....	......	2,161	88,541
Grand total	....	....	......	....	....	......	....	....	......	2,242	93,176

PETITION IS DENIED.

Isthmian Clerical Employes Cannot Be Granted Special Privileges in Classified Service.

A petition was presented to President Taft, during his recent visit to the Isthmus, by a number of clerical employes in the Canal force asking: That employes occupying positions in the classified service under the Isthmian Canal Commission be preferred above all other applicants for positions in the classified service in the United States or the insular possessions; that the age limit on appointments and the year limit on reinstatements be waived in the case of such persons; and that an employe appointed to the position of clerk with knowledge of typewriting, who performs the work of a stenographer, shall be eligible to appointment to positions requiring a knowledge of stenography and typewriting.

The President referred the petition to the United States Civil Service Commission, and the recommendations made by that Commission have been approved by the President. The first request is denied on the ground that the law will not permit such a preferential list, and, because it would be bad policy to give such preference to the detriment of classes of employes now eligible for transfer. The other requests made in the petition are based upon the first request, and they, likewise, are denied. Attention is called to the fact that the Civil Service Commission gave careful consideration to a petition in 1909, that employes, who had served on the Canal force for a period of three years and had passed a noncompetitive examination, should be made eligible for transfer to the classified service in the United States, and that the petition was not granted. Petitioners were advised to enter competitive examinations held on the Isthmus for the purpose of securing eligibles for the classified service in the States. This decision was published in full in THE CANAL RECORD of July 28, 1909. In conclusion, the decision of the Civil Service Commission says: "Employes appointed through competitive examination and those appointed prior to the classification of the service to positions which became classified by extension of the rules thereto, and which have remained competitive, are eligible for transfer under existing rules, and, by an amendment of September 16, 1910, were made eligible for transfer for a period of one year from the date of their separation from the Isthmian Canal service. This amendment was recommended in recognition of the difficulty of arranging transfers at a distance and for the purpose of giving to employes in the Canal Service, who are otherwise eligible. the same consideration as is accorded to employes in the classified Philippine service who have rendered at least three years of meritorious service in the tropics. The Commission is, therefore, of the opinion that the request of the petitioners should not be granted, and that no amendment to the rules applying to transfers is necessary for the benefit of employes of the Isthmian Canal Commission at this time."

Extension to Gorgona Foundry.

An extension of 150 by 70 feet will be made to the iron foundry at Gorgona, and material taken from one of the old shop buildings at Paraiso will be used for this purpose. A traveling crane of 25 tons capacity, purchased for use in the permanent shops, will be installed, and there will be a cleaning gallery with sand blast rigging and other equipment. A track for shipping castings from the foundry, and one for handling pig iron and scrap will be installed.

The United Fruit Company's ships for New Orleans, via Port Limon and Puerto Barrios ceased calling at Bocas del Toro on December 22.

Rates for Coach Hire.

The following ordinance enacted by the Isthmian Canal Commission at its 158th meeting on August 25, 1910, was approved by the Secretary of War on December 3, 1910:

ORDINANCE

Providing for the fixing of rates of charges to be made for the transportation of passengers over the streets and roads of the Canal Zone.

Be it enacted, by the Isthmian Canal Commission, as follows:

Section 1. The Head of the Department of Civil Administration is hereby empowered and directed to fix rates of charges which may be made and collected by persons engaged in the transportation of passengers for hire over the streets and roads of the Canal Zone by means of any automobile, or other motor vehicle of similar construction or operation, or by means of any carriage, surrey, wagon, cart, or other conveyance drawn by horses or mules. He is also empowered and directed, at any time when circumstances may appear to warrant, to revise or change such rates as may have been theretofore fixed by him. Said rates shall be reasonable.

Section 2. Immediately upon fixing such rates of charges, or upon any revision or change thereof being made by him, the Head of the Department of Civil Administration shall promulgate said rates or charges, or any revision thereof, in the following manner, to wit:

(*a*) By publication thereof in two consecutive issues of THE CANAL RECORD;

(*b*) By publication thereof by printed posters posted conspicuously in each of the following places: At the various police stations of the Canal Zone; at the various passenger stations of the Panama railroad in the Canal Zone and in the Republic of Panama; at the post-office buildings in the Canal Zone, and at any other points as may seem to him proper, in order that due notice thereof to the public may be given.

Section 3. The Head of the Department of Civil Administration shall also cause to be printed a sufficient number of cards or pamphlets containing such rates of charges so fixed, or revised by him, as may be necessary to furnish a copy thereof to each person driving or operating any conveyance of the hereinbefore indicated character for the transportation of passengers for hire in the Canal Zone; and it is hereby made the duty of all such persons to secure from the Head of the Department of Civil Administration such copy, and to keep same at all times conspicuously posted or displayed in each such conveyance so used or operated; and a failure so to do will constitute a violation of this ordinance.

Section 4. When rates for such transportation shall have been fixed and promulgated, as by this ordinance directed, any person who shall charge and collect for the transportation of any person over the streets or roads of the Canal Zone in either of the hereinbefore indicated conveyances any sum in excess of such prescribed and promulgated rates, shall be held to have committed a violation of this ordinance; and any person who has received for himself or others such transportation in the Canal Zone, and who fails or refuses to pay therefor the rate thus prescribed and promulgated, shall, likewise, be held to have committed a violation of this ordinance. *Provided, however*, a rate different from that promulgated hereunder may be charged and paid if the parties to the transaction may agree thereon, but if there be any dispute as to such agreement the duly prescribed rate shall prevail.

Section 5. Any person, firm, or corporation who fails to comply with any requirement or provision of this ordinance, or who charges and receives any rate in excess of that prescribed by the Head of the Department of Civil Administration, or who refuses to pay any rate prescribed by the Head of the Department of Civil Administration agreeably to the provisions of this ordinance, shall be held to be guilty of a misdemeanor, and upon conviction, shall be fined for each offense a sum not exceeding twenty-five dollars ($25).

The rates to be charged under this ordinance will be published as soon as they are decided upon.

OFFICIAL CIRCULARS.

Pay of Lidgerwood Engineers.

CULEBRA, C. Z., December 20, 1910.

CIRCULAR No. 299-J:

The rate of pay of Lidgerwood engineers, who have served satisfactorily for a period of one year, may be increased to $137.50 a month.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Monthly Report of Lubricants.

CULEBRA, C. Z., December 19, 1910.

HEADS OF DEPARTMENTS AND DIVISIONS:

Circulars No. 314 and 314-A direct that a record of oil issued to various pieces of equipment shall be kept by each division and a statement of same compiled monthly, copies of which shall be sent to those directly concerned and to me. So far as the plant and equipment covered by the circulars above mentioned are concerned, copies of such statements have, in most cases, been received.

By January 1, 1911, all plant and equipment of the Isthmian Canal Commission and Panama Railroad Company, including stationary plants, etc., will have been given approved monthly allowances of oils, greases and waste, and, subsequent to that date, it is desired that *two* copies of monthly report of lubricants used on each item of plant, equipment, etc., be forwarded promptly at the close of each month to me.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

LABOR FORCE AND QUARTERS IN NOVEMBER.

On November 30, there were 35,641 employes actually at work on the Canal and the Panama railroad, and of that number, 29,690 were Canal employes. The gold force on the Canal work, composed almost entirely of white Americans, was 4,646.

The report of the Chief Quartermaster for November shows that the number of family quarters occupied by "gold" employes was 1,737, which is 6 more than in October, and the occupants numbered 5,430, an increase of 68. Of this number, 1,846 were women, and 1,797 children. Bachelor quarters occupied by "gold" employes numbered 1,930, and the occupants numbered 3,472, of whom 199 were women. The family quarters occupied by European laborers numbered 271, and the occupants, 873; bachelor quarters, 108, and the number of occupants, 5,159; The family quarters occupied by West Indians numbered 1,070, and the occupants, 5,554. bachelor quarters, 230, and the number of occupants, 4,868. A statement of the force actually at work on November 30, follows:

DEPARTMENT.	Monthly.	SILVER EMPLOYES.												Total Silver.	Total Gold.	Grand Total.
		Artisans.					European Laborers.		West Indian Laborers.							
		44 cents.	32 cents.	25 cents.	20 cents.	16 cents.	20 cents.	16 cents.	20 cents.	16 cents.	13 cents.	10 cents.	7 cents.			
Const'ct'n and Eng'r'ng.	4,453	16	24	262	658	2,702	3,083	1,494	116	596	3,345	3,460	273	20,482	3,470	23,952
Civil Administration....	184	..	..	2	4	18	......	......	...	......	......	6	....	214	354	568
Sanitation........	675	..	..	3	5	3		1	...	.....	5	382	9	1,083	398	1,481
Quartermaster's.........	968	2	2	92	169	110	213	30	34	.....	8	996		2,624	239	2,863
Subsistence..............	627	..	..	1	1	......	......	......	...	.....	......	......	....	629	57	686
Disbursements...........	7	..	..	....	.....	......	......	......	...	.....	......	......	....	7	24	31
Examinat'n of Accounts.	5	..	..	....	.....	......	......	......	...	.....	......	......	....	5	104	109
Total................	6,919	18	26	360	837	2,833	3,296	1,525	150	596	3,358	4,844	282	25,044	4,646	29,690

Panama railroad force, 3,484; Panama railroad relocation force 1,437; Panama railroad commissary force, 1,030. Total, 5,951. I. C. C. force, 29,690. Grand total, 35,641.

CULEBRA CUT EXCAVATION.

Sizes of Steam Shovel Dippers and Classes of Cars by which Material is Removed.

Two classes of steam shovels are excavating in Culebra Cut, one class equipped with a dipper of 2½ cubic yards capacity, and the other with a 5-yard dipper. These dippers seldom dig to their full capacity, and a car which is loaded in eight operations of the shovel contains about 19 cubic yards of material, the rated capacity of the flat cars used with Lidgerwood unloaders. A cubic yard of material weighs roughly two tons, and, for sake of familiar comparison, is said to represent a two-horse load of earth.

Three classes of cars are used in hauling spoil from the Cut. The wooden flat cars with one high side, so constructed that they may be unloaded by an unloading plow, have a rated capacity of 19 cubic yards. Twenty of these cars are ordinarily hauled in a train, and the spoil on a train would, therefore, be about 380 cubic yards. The next largest cars are the Western and Oliver air dump cars which have a rated capacity of 17 cubic yards, and are used almost exclusively in hauling rock to Gatun Dam. Twenty-seven of these cars compose a train, and the amount of spoil on each train is, therefore, about 459 cubic yards. The small Western and Oliver dump cars, known as the "12-yard dumps" are rated at 10 yards capacity each, and 35 of these cars ordinarily compose a train, the amount of spoil in each train being, therefore, 350 cubic yards.

The capacity of the dump cars is based upon cross section measurements covering a long period. Careful track is kept of the excavation by cars, and each month this is compared with the excavation as determined by cross section measurement. The difference between the two methods of measurement is never great.

The time taken for loading each car varies according to the material in which a shovel is excavating, and to innumerable small delays incident to the excavation and transporting of the spoil. An illustration is the work done by 20 steam shovels in the Culebra construction district on November 11, when 30,077 cubic yards of rock and earth, an average of 1,503 cubic yards per shovel for the 8-hour working day, were excavated. The shovels were under steam 160 hours, were actually digging 109 hours, were waiting for cars 38 hours and 40 minutes, and were delayed the remainder of the time by mining, cleaning track, repairs to shovel, track repairing, and moving the shovels forward. With all conditions favorable a shovel can complete a digging operation in one minute and thus load a 19-yard car in about eight minutes.

Resolution of Sympathy.

Paradise Lodge, No. 6, Knights of Pythias, at a meeting held at Paraiso, passed a resolution of sympathy on the death of Mrs. Smith, the wife of Richard C. Smith, a member of that lodge.

Barge No. 7 Floated.

Atlantic Division barge No. 7, which was driven ashore in front of the Washington Hotel at Colon during the gale of December 2, was pulled off on Monday, December 19, and is now at the Cristobal dry dock undergoing repairs. It was found that in addition to the washing away of the boiler house and living quarters for the crew, some of the hull plates required reriveting, and the after peak tank bulkhead was broken. There were no holes in any of the hull plates. In rebuilding the boiler house and living quarters, it is contemplated making them of steel and to fasten the steel work firmly to the deck of the barge, in order to lessen the liability of their being washed away in case heavy seas sweep over them. It is also probable that a steel house will be constructed over the towing machine, to protect it, as well as the man who is stationed there, following the precedent established on the four new barges recently purchased.

Hines Found Guilty.

The trial of Henry J. Hines, charged with the embezzlement of Government property, was held in the Circuit Court of the First Judicial Circuit on Saturday, December 24. Judge Gudger found the defendant guilty on all six charges preferred against him. Upon the announcement of the verdict, the defendant's attorneys made a motion for a new trial, and the arguments on the motion were heard on Wednesday, December 28. The motion was overruled and Judge Gudger sentenced the defendant to a term of five years in the penitentiary at Culebra.

The trial of F. P. Petersen and Charles Silvers, against whom embezzlement charges have been preferred in connection with the same matter, will be held on January 4.

Porto Bello Crusher.

A statement of the work done at the Porto Bello crusher, by days, for the weeks ending December 17 and 24, follows:

DATE.	Hours worked.	Cubic Yards.
December 12	9:49	2,869
December 13	10:15	3,270
December 14	10:21	3,334
December 15	9:04	3,372
December 16	10:12	2,700
December 17	10:19	2,844
Total	60:00	18,389

DATE.	Hours worked.	Cubic Yards.
December 19	9:00	3,639
December 20	8.32	3,507
December 21	6:42	2,912
December 22	9:42	3,637
December 23	9:40	3,765
December 24	10:16	3,877
Total	53:52	21,337

Obituary.

W. H. H. Brady, sanitary inspector at Gatun, died at Colon Hospital on December 25, as the result of an accidental fall from the veranda of his house on the evening of December 24. He was born at Bladensburg, Md., was 35 years of age, and had been on the Isthmus since 1905. He is survived by a wife and three children. The funeral services will be held at Ancon chapel, Sunday, January 1, at 2 p. m.

Heavy Rainfall at Monte Lirio.

The rainfall at Monte Lirio during the 24 hours from 8 a. m., December 21, to 8 a. m., December 22, was 6.12 inches, of which 4.84 inches fell between the hours of 8 a. m. and 5 p. m. on December 21.

Post-Office Business.

The report of the Director of Posts for the month of November shows that 17,828 money orders, amounting to $434,905.55, were issued, an increase of $5,693.85 over October. Of the $434,905.55 issued in November, the sum of $337,127.27 was drawn in orders payable in the United States, $97,230.28 in orders payable in the Canal Zone, and $548 in orders payable in Martinique. The fees collected amounted to $1,938.85, and the amount paid and repaid was $99,005.76.

Postal sales for the month amounted to $6,535.05, and newspaper postage amounted to $2.67.

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Colon, Cristobal and Balboa during the week ending December 24, 1910:

Ancon, December 18, from New York, with 23,463 barrels cement for Atlantic Division; 121,876 bags cement for Pacific Division.

Sibiria, December 19, from New York, with 9 cases tubes, 200 barrels carbolic acid, 30 drums engine oil for stock.

Hornelen, December 19, from Eagle Harbor, with 331 pieces piling for Atlantic Division; 13 cases blasting caps for stock.

Allianca, December 22, from New York, with 8 cases electrical supplies, 41 reels wire rope for Atlantic Division; 7 cases electrical machinery and supplies for Pacific Division; 370 pieces castings for Mechanical Division; 71 drums lubricating oil, 300 cases sapolio, 92 kegs nuts, 223 kegs bolts, 31 cases bolts, 81 pieces steel bars, 16 cases rubber packing, 37 coils copper wire, 417 bundles shovels for stock; and a miscellaneous cargo, the whole consisting of 1,944 packages, weighing 161 tons.

Atenas, December 22, from New Orleans, with 53 reels wire rope, 197,453 feet yellow pine lumber for Atlantic Division; 374 bales hay, 2,500 crates fire brick, 100 bundles timber carriers and hooks, 71 barrels sea coal facing for stock.

Almirante, December 22, from New York, with 56 tons lock construction material for Pacific Division; 10 bundles brooms, 50 cases paint for stock.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, December 24, 1910. All heights are in feet above mean sea level.

DAY AND DATE	STATION.				
	Vigia.	Alhajuala	Gamboa.	Bohio.	Gatun Lake.
Sun. Dec. 18	128.8	94.9	48.8	20.5	19.9
Mon. Dec. 19	129.0	95.1	48.5	19.6	19.1
Tues. Dec. 20	128.3	94.5	48.3	18.9	18.4
Wed. Dec. 21	132.3	96.8	50.3	20.2	19.0
Thurs. Dec. 22	134.3	98.6	52.3	22.1	20.5
Fri. Dec. 23	129.2	95.2	48.8	21.6	20.4
Sat. Dec. 24	128.6	94.7	48.1	20.5	20.1
Height of low water	125.0	92.02	46.0		

Rainfall from December 1 to 24, Inclusive.

MIDNIGHT TO MIDNIGHT.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	1.86	2	10.20
Balboa	2.00	10	9.21
*Miraflores	2.03	3	8.67
Pedro Miguel	2.54	3	9.58
Rio Grande	2.41	1	10.89
Central Section—			
Culebra	2.95	1	11.84
*Camacho	3.48	1	11.58
Empire	1.71	4	9.01
Gamboa	2.57	4	12.89
Alhajuela	2.63	6	15.39
*El Vigia	3.55	3	15.89
*Gorgona	3.40	3	15.47
San Pablo	3.24	3	18.02
Tabernilla	2.47	3	16.94
Bohio	3.02	4	20.58
*Monte Lirio	4.84	21	23.05
Atlantic Section—			
Gatun	4.24	21	17.68
*Brazos Brook	4.72	21	19.17
Cristobal	2.51	4	14.05
Porto Bello	6.01	15	†21.81
*Nombre de Dios	3.72	4	20.66

*Standard rain gage. Readings at 5 p. m. daily. Automatic rain gage at unstarred stations. Values midnight to midnight.

†To 5 p. m., December 23.

MECHANICAL IMPROVEMENTS.

Economies Effected by Alterations and Additions to Cars and Dump Machines.

The output of a steam shovel is limited more by the rate at which material it digs can be carried away than by any other factor, and the improvements that have been made in the transportation and disposal of spoil have been, therefore, of prime importance in the excavation of the Canal. Many such improvements have been made since the digging in Culebra Cut was begun, and some of them have a permanent value both for the work on the Isthmus and elsewhere. Working conditions suggested most of these, in fact, the need of overcoming obstacles pointed out the remedy. From the time spoil leaves the shovels until the empty trains return from the dumps the work is in charge of the transportation men, who run the trains, unloaders, spreaders, and track shifters.

Flat cars with one high side and the other side open are used for hauling most of the spoil from Culebra Cut. The high side, permitting of a heavier load on that side of the car than on the other, was found to be the cause of an unequal distribution of weight, and to overcome this the floor has been extended 11 inches on the low side, making it possible to distribute the weight of the load nearer the center line of the trucks, and also enabling the unloading plows to throw the spoil farther away from the tracks when the material is ploughed off. It was found early in the use of these cars that the unloading plow was causing a lot of damage to the high sides by running into them, in passing from one car to another. This cause of trouble and expense has been eliminated by binding the high side of the car with an iron ferrule, known as the "bull nose," which presents a beveled edge to the plow and thus steers it into position as it passes from car to car. These cars were provided with a sheet steel apron so fastened to the end of one car that it could lap over the coupling mechanism and thus make the train continuous. The aprons were so set that the unloading plows frequently tore them off, in fact there is a record of 130 aprons having been torn from the cars in one day. The means of fastening these aprons has been so changed that now they are seldom torn off, half a dozen such accidents in a day being the average.

Trouble was also experienced in the first days of the heavy trains by the coupling breaking and the trains separating. A bridle has been devised which overcomes this difficulty, by holding the cars together in case the automatic coupler parts from any cause, such as a worn knuckle, worn or broken lock, broken knuckle tongue, broken jaw, or even in case a drawbar carrier is down. By using the bridle the cars are held in their original position, even after the coupler has broken, and the parting of the compressed air line is thus obviated. Each train crew is supplied with two of these bridles for emergencies, and twelve hundred of them have been made for the Canal and Panama railroad service. They are especially serviceable in the coupling between a Lidgerwood unloader reel car and its locomotive, where the pipe which carries the steam from the locomotive to the reel engine formerly broke every time a coupling gave way, subjecting anyone near the break to a scalding. At one time it was difficult to persuade men to work near the coupling because of the danger from this source, but now the cars cannot part.

The machines used on the dumps have undergone most improvement, and here the greatest savings in time and labor have been effected. They are the unloaders, spreaders, and track shifters. They are handled by transportation men, with the grade of "qualified conductor," who have been especially trained for this service. The spreader is the most complicated machine, requiring long continued practice on the part of the operator before he becomes thoroughly efficient.

The unloading of flat cars is done by pulling a steel plow from one end of the train to the other by means of a cable attached to a powerful reel. When first used on the Canal work the plow was a skeleton with a plate wing. It was weighted down with from seven to twelve tons of ballast in order to keep it on the bottom of the cars and so prevent it from riding over the spoil. Small rock was continually working under the bottom and over the top of the plow, and, as there was no way for it to escape except by being ground out, it did constant damage to the floor and was continually catching in the aprons. The plow has been covered with sheet steel on the top and bottom and thus the small rock has been excluded, while, by an adjustment of ballast along the share 3½ tons of weight have been found sufficient to hold the plow on the floor, entirely overcoming its tendency to rise.

It was necessary formerly to spend several minutes in digging the end of the cable attached to the plow out of the spoil along the face. This waste of time has been eliminated by forming grommets out of worn-out cable and attaching them to the plows where they are always in plain sight, so that the unloading cable can be coupled to the grommet without any of the work of digging rock and earth away from the face. Another waste of time was that formerly experienced in attaching the cable to the stretching frame, and loosening it after it had been stretched over the train. A slip link has been placed in the chain, which holds the cable to the stretching frame, and a blow from an iron rod opens this link, allowing the cable to fall upon the car without the train even stopping. In this chain there has been placed a soft link with a breaking strain of 1½ tons, and if anything interferes with the plow, which may place an unduly heavy strain on the cable, this link will give way, thus saving the cable stretcher from being wrecked. Not infrequently it is desirable to unload a train on a curve, and under such conditions it is almost impossible to keep the cable on the train, because under the great strain of the unloading it naturally seeks the shortest line. A block to hold the cable in place has been devised. This block is fixed to a 3¾-inch chain eight feet long, on the other end of which is a hook that can be attached to the arch bar of the car truck. The cable runs through this block and is thus held in place.

On one day, about eight months ago, one unloader at Tabernilla unloaded 18 trains of 19 cars to a train, in all 3½ miles of cars. In August, an average of 40 cars a day was unloaded at Balboa, or 13⅓ trains to an unloader; 19 cars of 20 cubic yards to each train.

In handling soft dirt in slides, and other material, where it is necessary to uncouple cars from a train and back them alongside the shovels, the steel aprons that join the cars are thrown back, in order that the couplings may be broken. In the loading, these aprons are frequently covered with a ton or so of spoil, and when it becomes necessary to throw them back into position, so that the plow can pass over them considerable labor is required to take the spoil off the top of the apron. All this work has been obviated by an apron thrower, which consists of a short chain with a hook on one end and a cable grip on the other. The hook is placed under the apron and the grip fixed to the moving unloading cable, and thus the apron is returned to its correct position in advance of the plow.

Fifty-one improvements have been made on the machine used to spread material on the dumps, and each one has added something to efficiency or subtracted from the time spent in operating. This spreader consists of a car on which is erected a machine with steel wings, which reach out 11½ feet from the rails on either side and level off the material dumped from the spoil trains. Two thousand men with shovels could not do so quickly and well the work done by one of these machines when it is operating at its best. The spreader is operated by compressed air. The main reservoir in which the air is stored has been moved from its original position, parallel with the length of the car, and placed in a position where it is less in the way, while all the piping has been rearranged for pressure from this reservoir, instead of from the train air line. An operator's table, under cover, has been erected at the rear of the car, and the operator occupies an elevated position from which he can witness all the movements of the machine. Six air switches in front of him give him complete control. When they arrived on the Isthmus these machines were so constructed that they could not clear one another on the main line of the railroad, even when the spreading wings were folded, and they have been altered so that they now clear. A wheel on the front wing, which ran along the track and frequently caught in and split expansion rails and switches, has been replaced by a shoe which rests on the rail and takes the weight off the wing without in any way interfering with the rails. Shoes have been added along the edge of the wings to take the wear, thus saving the main ploughshare. Other improvements are in minor parts, but each one has added to the efficiency of the spreader.

The system of dumping flat cars by the use of the plow necessitates the constant moving of tracks in order that the dumps may be kept in uniformly level condition. This is done by a shifter devised for work on the Isthmus. It consists of a boom, extending from a flat car out over the track in advance of the car, and tackle, by means of which the track is lifted from its bed. Another boom extending from the car at an angle with the main boom is used for pulling the track to one side or the other. The track shifter has been so improved that track can be thrown nine feet from its original position in one operation, instead of only five feet, as formerly. A change in all the shifters is now in progress by which the engine for running the hoists will take steam from the lcocomotive, and thus make it possible to operate the track shifter more economically, because of a saving in wages and in the amount of fuel used. An example of the work of one of these shifters was that done at Tabernilla dump about eight months ago, when 1¼ miles of track were shifted 12 feet from the original position in 1 hour and 50 minutes.

SOCIAL LIFE OF THE ZONE.

Christmas Festivities.

It is estimated that nearly 2,000 American children participated in the Christmas entertainments held in the Canal Zone villages. Several dances were held on Christmas Eve, including those of the Tivoli Club at Ancon; the Gatun Club at Gatun, and the Paraiso Dancing Club at Paraiso. On New Year's Eve, the Stranger's Club will hold a dance in its club room in Colon, and the Pedro Miguel Card Club will give a card party in the social hall at Pedro Miguel.

The Christmas sale and card party held by the Paraiso Woman's Club on December 14 was well attended. The proceeds amounted to about $35. The next meeting of the club will be held on Wednesday, January 4, when there will be an election of officers for the ensuing six months. Delegates to the January meeting of the Canal Zone Federation will also be elected.

On December 13, an entertainment of moving pictures, with a musical program, was given under the auspices of the Pedro Miguel Woman's Club. About $35 was made for the Christmas fund.

Visit of Bishop Bristol.

Bishop Frank M. Bristol of Washington, D. C., is expected to arrive at Colon on the *Tagus*, on January 1, on his annual visit to the Methodist work on the Isthmus. He will preach at the Methodist Episcopal Church, Panama, on Sunday evening, January 1, 1911. The quarterly communion service will be held at 10 a. m. All are most cordially invited to attend these services.

William W. Gray,
District Superintendent.

Loving Cup for Archdeacon Bryan.

The meeting of the Woman's Altar Guild of St. Luke's Church, Ancon, held at the Tivoli Hotel on Tuesday, December 20, was in the nature of a farewell reception to the Ven. Archdeacon Henry B. Bryan who leaves the Isthmus in January. The guild presented a silver loving cup, the presentation being made by Col. W. C. Gorgas. The cup, a Tiffany design, bears the inscription, "Presented to Archdeacon and Mrs. Bryan as a token of affection by the women of St. Luke's Guild, Ancon, Christmas, 1910." Archdeacon Bryan organized the guild in November, 1907, and has been its advisor and honorary president since that time. Both he and Mrs. Bryan were elected honorary members. Following the business meeting, which was held in the sun parlor, tea was served in the balcony tea room overlooking the Pacific Ocean. There was an attendance of 32, including a number of guests.

Gatun Christian League.

The Gatun Christian League held a semiannual election of officers on Sunday evening, December 25, following the evening service. The league has a present membership of 100.

University Club Excursion.

An excursion over the Canal work will be run by the University Club for its members and women friends on January 1. The special train will leave Empire at 8 a. m., Culebra at 8.10, Corozal at 8.25, arriving at Panama at 8.35. It will leave Panama at 9.30, go to the Naos Island breakwater, enter Culebra Cut at Paraiso, leave the Cut at Gamboa, and run over the relocated line to Barbacoas, thence over the old line to Gatun.

Civil Engineers to Visit Canal.

Two parties made up of members of the American Society of Civil Engineers will visit the Isthmus from March 9 to March 16, 1911. One party will come by way of New York, and the other by way of New Orleans.

Stop-over in Jamaica.

Canal employes purchasing tickets for passage to New York via Kingston, Ja., by the "*Prinz*" steamers of the Hamburg-American Line, sailing fortnightly on Tuesdays from Colon, may, if they desire, stop over at Kingston for four days and continue the trip to New York on the *Albingia* and *Allemannia*, of 5,000 tons, without additional charge.

Missing Men.

Any one having information regarding the whereabouts of Henry G. Higley, an American civil engineer, who is supposed to have come to Panama from Guayaquil, Ecuador, in 1904, is requested to communicate with James C. Kellogg, American Consul, Colon.

If Frank B. Dirveneck will communicate with C. J. Dibowski, Empire, C. Z., he will receive a packet of letters from his father.

I. O. O. F.

Pacific Lodge, No. 4, I. O. O. F., will hold a semiannual election of officers at the Ancon lodge hall on Thursday evening, December 29.

Married.

MATHESON-MASON—On December 27, at St. Luke's Church, Ancon, the Ven. H. B. Bryan officiating, Ethel, daughter of Lieutenant-Colonel and Mrs. Charles Field Mason, to Lieutenant John Roy Douglas Matheson, Corps of Engineers, U. S. A. Residence, Washington, D. C.

BEAM-DRIVER—At Empire, Wednesday, December 21, Lela Mabel Driver, daughter of Mr. and Mrs. John Benjamin Driver, to Walter Irvin Beam, Rev. W. H. Decker officiating. Canal Zone residence, Empire.

BURRELL-GREEN—At Ancon, Saturday, December 17, Avice Green of Pedro Miguel to Joseph Burrell of Pedro Miguel, the Rev. W. W. Gray officiating. Canal Zone residence, Pedro Miguel.

FINCH-GORHAM—On Christmas Eve, in Ancon Hospital Chapel, Zola Gorham to Ernest V. L. Finch, both of Empire, Rev. A. A. Nellis officiating. Canal Zone residence, Empire.

SCHEDULE OF BASEBALL GAMES FOR SEASON OF 1911.

The official schedule of games to be played by the teams composing the Panama Canal Baseball League during the season of 1911 is published below. It provides for 20 games, the season to open on Sunday, January 1, and to close on Sunday, April 23. Ancon and Empire will each play 16 games on the home grounds and four abroad. The Commissary-Subsistence and Atlantic teams each have eleven games at home and nine abroad. Gorgona will play six games at Ancon, six games at Empire, and eight games at Colon. The Marines will play six games at Ancon, eight games at Empire and six games at Colon. There are three holiday dates—January 2, February 22, and April 14.

Date.	Ancon.	Empire.	Colon.	No. of Games
January 1	Ancon-Marines	Empire-Gorgona	Com.-Sub.-Atlantics	1
January 2	Ancon-Marines	Empire-Gorgona	Com.-Sub.-Atlantics	2
January 8	Ancon-Gorgona	Empire-Atlantics	Com.-Sub.-Marines	3
January 15	Ancon-Gorgona	Empire-Atlantics	Com.-Sub.-Marines	4
January 22	Marines-Atlantics	Empire-Ancon	Com.-Sub.-Gorgona	5
January 29	Ancon-Empire	Marines-Atlantics	Com.-Sub.-Gorgona	6
February 5	Ancon-Atlantics	Empire-Com.-Sub.	Gorgona-Marines	7
February 12	Ancon-Atlantics	Gorgona-Marines	Com.-Sub.-Empire	8
February 19	Ancon-Com.-Sub.	Empire-Marines	Atlantics-Gorgona	9
February 22	Atlantics-Gorgona	Empire-Marines	Com.-Sub.-Ancon	10
February 26	Ancon-Marines	Empire-Gorgona	Atlantics-Com.-Sub	11
March 5	Ancon-Marines	Empire-Gorgona	Atlantics-Com.-Sub	12
March 12	Ancon-Gorgona	Empire-Com.-Sub.	Atlantics-Marines	13
March 19	Ancon-Gorgona	Empire-Com.-Sub	Atlantics-Marines	14
March 26	Com.-Sub.-Marines	Empire-Ancon	Atlantics-Gorgona	15
April 2	Ancon-Empire	Marines-Com.-Sub	Atlantics-Gorgona	16
April 9	Ancon-Com.-Sub	Empire-Atlantics	Marines-Gorgona	17
April 14	Ancon-Com.-Sub	Gorgona-Marines	Atlantics-Empire	18
April 16	Ancon-Atlantics	Empire-Marines	Com.-Sub.-Gorgona	19
April 23	Com.-Sub.-Gorgona	Empire-Marines	Atlantics-Ancon	20

The players under contract and on the reserve lists of the clubs in the Panama Canal Baseball League for the 1911 season, are as follows:

Ancon—R. A. Caldwell, R. M. Smith, G. A. Yingling, Victor Nygren, R. B. Tinsley, F. E. Pearman, H. S. Hunter, G. W. Keller, D. K. Steele, L. M. Drennan, R. P. Drennan, W. D. Wrightson, Hulbert Potter, A. G. Snyder, S. C. Russell*.

Empire—G. W. Lyon, Zan Murphy, W. G. Willis, W. F. Polk, C. A. Dixon, Wade H. Moore, C. L. Bryan, W. J. Marshall, F. M. Bell, G. C. McCullough, B. B. Toone, Geo. S. Markley, Harry B. Bryan, J. L. Luttrell.

Gorgona—Wallace Wright, E. L. Emery, Walter Clements, Chesty Herring, John Ridge, Ernest Briggs, Thomas Bailey, H. Massen, Fred Slater, L. F. Fullerton, Chas. Calvitt, Earl Berford, Louis Trotter, Tom Ryan, D. Kenney, Wm. Barney.

Atlantics—R. S. Davis, J. P. Osborne, J. C. Cushing, G. H. Morrell, I. H. Fleischman, G. E. Herring, D. T. Edwards, Jr., S. C. Russell*, T. T. Dougherty, O. S. Farrar.

Commissary-Subsistence—H. F. Hodnett, Jr., Thos. A. Sullivan, Frank Breivogel, N. C. Jones, Joe Curtis, W. H. McCusty, Daniel F. Horrigan, Albert C. Kellogg, J. W. Coffin, Jr., R. S. Mosher.

Marines—R. L. Shepard, W. W. Buckley, J. Cramer, E. Richards, C. H. Guskie, F. P. Myers, J. C. McCabe, P. L. Burns, W. Q. Silke, W. H. Fields, E. L. Maguire, F. H. McKelvey, W. H. Ryan, W. P. Kenyon, H. Munsen, W. F. Kennedy, F. F. Austin, O. E. Jordan.

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*Claimed by both clubs.

The Ancon baseball club played a team from the U. S. S. *Princeton* at the Ancon park on Christmas morning, the game resulting in a defeat for the visitors by the score of 14 to 2, the home team scoring eight runs in the second inning.

The Ancon second team played a game of ball with a picked team from Corozal on Monday, December 26, which resulted in a score of 12 to 5 in favor of Ancon.

FOUND—A ring which can be had on proof of ownership. R. S. Stiles, house 36-B, Corozal, C. Z.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

The standing in the billiard tournament is as follows:

Name.	Won.	Lost.	Name.	Won.	Lost.
Bayne......	1	4	Hall.......	4	1
Case.......	2	2	Hepler.....	2	1
Clark.......	1	2	Silver......	3	2
Conlan.....	2	2	Soderberg..	1	2
Dubois.....	0	3	Thomson...	2	3
French.....	4	0			

Empire won two games from Culebra at Culebra on Thursday evening, December 22, by the following score:

Empire.				Culebra.			
Gustavson..	158	198	161	Cohen....	159	168	165
Potter......	176	173	219	Herrington	138	178	157
Bardelson...	164	159	181	Fleischman	135	...	...
Pearson.....	178	157	175	Case......	182	211	163
Huson......	159	162	150	Dougherty.	186	222	196
				Mengel....	...	169	192
Total.....	835	849	886	Total...	800	948	873

EMPIRE.

About 300 children were present at the entertainment on Christmas Eve. The Marine Band played during the entire evening. After the children had rendered a program of music and recitations, Santa Claus in the person of Edward Keeling came down the chimney and each child was presented with a present and a box of candy. Following the program by the children, the following entertainment was given for the older people: Selections by the Marine Band; "Noel" by Mr. Dohrmann, orchestra and chorus; yodeling solo by Owen King; impersonations by Harry Guerard; selections by the Marine Band. Following this entertainment, the ladies served refreshments in the reading room.

The semiannual election of officers of the literary society will be held on Friday evening, January 6.

Members of the musical and dramatic society furnished Christmas music at the chapel on Christmas morning, and at St. Mary's Episcopal Church in the evening.

The following high scores were rolled during the week on the bowling alleys: Snyder, 212; Pearson, 224, 223; Gorham, 210, 204; L. Giavelli, 208.

An informal song service was held at 9 o'clock on Sunday evening, December 25. Most of the lights were turned out, and in the dim light of the Christmas tree, favorite songs and hymns were sung.

GORGONA.

The Christmas cantata "Sleepy Santa Claus," by the children, who were trained by Mrs. Loughery, Mrs. Booz and Melville Booz, attracted a large audience. The Brotherhood of Railway Carmen, Knights of Pythias, Redmen, and the citizens of the town raised a fund to purchase candy, nuts, and fruit for the children. Christmas trees imported from the States were beautifully decorated by the electrical department. The woman's club made, and filled the stockings.

The pool tournament just closed was won by L. P. Robitoy, followed by R. A. Montgomery, L. E. Clarke, and G. H. Pierson.

The following games were rolled on the bowling alleys on Monday, December 19:

Culebra.				Gorgona.			
Cohen......	131	148	169	Roper.....	190	196	182
Mengel.....	159	172	141	Otis......	200	140	171
Fleischman..	131	150	149	White.....	201	174	210
Case.......	214	167	182	Bordt.....	176	197	153
Dougherty*.	201	183	145	M. Var'k'p	194	169	158
Total.....	836	820	786	Total...	961	876	874

On Monday, January 2, at 8 p. m., a musical and literary entertainment will be given to the general public, for which there will be no charge. Refreshments will be served.

CRISTOBAL.

A special train was run to Gatun for the benefit of those wishing to see the closing basketball game in the league series between Gatun and Cristobal on Thursday night. Over 100 people went from Cristobal. The score was 35 to 24 in favor of Cristobal, which gave them the eighth straight game and the championship of the Isthmus. The line-up during the league games was as follows: R. H. Sartor, r. f. 0 A. L. Prather, l. f.; R. M. Vifquain, c.; J. H. Weller, (capt.) r. g.; R. H. Luce, l. g.; M. A. Schwallenberg, sub. g.; W. A. Morton, sub. c.; C. E. Pring, sub. g.

The Cristobal intermediate basketball team won from the Gatun intermediates by a score of 15 to 6. The league bowling team lost to Gatun two out of three games. The second bowling team won three straight games from Gatun. A splendid program was given in the clubhouse hall by the children of Cristobal on Saturday evening. Following the program, the distribution of presents took place, and every child present received a gift. Home made cake, ice cream and punch were served by the ladies.

PORTO BELLO.

"Christmas at the Cross Roads," a short comedy sketch with 12 characters, was "put on" by local talent at the Christmas entertainment held on Saturday. The different characters were played by Mrs. Pflueger, Mr. and Mrs. Van Fleet, Mrs. Werner, Miss Moon; Messrs. W. S. Thomson, Nemec, Everett, Lynch, MacDougal, Washburn, and Geer. Mr. Humburg sang two solos. Walter Thomson acted as Santa Claus and delivered a present to every one in the house. After the distribution of presents, Thomas Lynch played the piano for an informal dance.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Gorgona, C. Z., on Sunday, January 1, 1910, at 6 p. m. The program follows:

1 March—*Monstrat Viam*....................Joy
2 Selection—*The Chocolate Soldier*...........Straus
3 *Procrastination Rag*......................Cobb
4 Overture—*Stradella*.....................Flotow
5 Waltz—*Tres Jolie*...................Waldteufel
6 Medley Selection—*Popular Hits*..........Alford
7 Intermezzo—*Silver Bell*..................Wenrich
8 Humoresque—*What's the Matter With Father?*..............................Lampe
9 March—*Any Little Girl Thats' a Nice Little Girl*..............................Fischer

CHAS. E. JENNINGS, *Musical Director.*

The next concert will be given at the Hotel Tivoli on Sunday, January 8, at 7.30 p. m.

PANAMA RAILROAD COMPANY.

PASSENGER TRAIN TIME TABLE No. 8—IN EFFECT JANUARY 1, 1911.

SOUTHWARD.								Miles from Colon.	STATIONS.	NORTHWARD.									
SUNDAY ONLY.					DAILY EXCEPT SUNDAY.					DAILY EXCEPT SUNDAY.				SUNDAY ONLY.					
29	27	25	23	21	7	5	3			2	4	6	8	20	22	24	26	28	30
P. M.	P. M.	P. M.	A. M.	A. M.	P. M.	A. M.	A. M.			A. M.	P. M.	P. M.	P. M.	A. M.	P. M.	P. M.	P. M.	P. M.	P. M.
7.00	4.00	1.00	10.00	6.45	4.35	10.30	5.25	0.00	Leave. †Colon. Arrive.	8.35	12.50	3.35	7.35	8.45	12.00	3.00	6.00	9.00	11.40
s 7.05	s 4.05	s 1.05	s 10.05	s 6.50	4.39	10.34	s 5.30	1.77	............†Mount Hope (Cabin)	s 8.30	12.47	3.30	7.30	s 8.41	s 11.56	s 2.56	s 5.56	s 8.56	s 11.37
f 7.10	4.10	1.10	f 10.10	6.55	4.45	10.40	s 5.36	4.37	............†Mindi..............	s 8.24	12.42	3.24	7.24	f 8.35	11.50	2.50	5.50	8.50	f 11.31
f 7.15			f 10.15				s 5.41	5.94	.... New Gatun..........	s 8.19				s 8.30					f 11.26
s 7.18	s 4.18	s 1.18	s 10.18	s 7.01	s 4.51	s 10.46	s 5.44	6.79	............†Gatun......	s 8.17	s 12.38	s 3.19	s 7.17	s 8.27	s 11.44	s 2.44	s 5.44	s 8.44	s 11.24
s 7.36	f 4.36	f 1.36	f 10.36	f 7.19	s 5.11	s 11.07	s 6.03	15.26	....†Bohio..........	s 7.58	f 12.16	f 2.59	s 6.56	s 8.08	s 11.25	s 2.25	s 5.25	s 8.25	f 11.05
s 7.42	s 4.42	s 1.42	s 10.42	f 7.25	s 5.17	f 11.13	s 6.09	18.51	.... Frijoles..	s 7.52	s 12.10	f 2.53	s 6.50	s 8.02	s 11.19	s 2.19	s 5.19	s 8.19	s 10.59
s 7.48	s 4.48	s 1.48	s 10.48	s 7.31	s 5.23	s 11.19	s 6.15	21.37	............†Tabernilla.....	s 7.46	s 12.04	s 2.47	s 6.44	s 7.56	s 11.13	s 2.13	s 5.13	s 8.13	s 10.53
					5.24	11.20	6.16	21.61	............†Tabernilla Cabin....	7.45	12.02	2.46	6.43						
					5.26	11.22	6.18	22.87	............†Barbacoas Cabin....	7.43	P. M. 12.00	2.44	6.41						
s 7.53	s 4.53	s 1.53	s 10.53	s 7.36	s 5.27	s 11.23	s 6.19	23.30	............†San Pablo..........	s 7.42	s 11.59	s 2.43	s 6.40	s 7.51	s 11.08	s 2.08	s 5.08	s 8.08	s 10.48
f 7.59	f 4.59	f 1.59	f 10.59	f 7.42	f 5.33	f 11.29	f 6.25	25.74	............†Mamei..............	f 7.36	f 11.53	f 2.37	f 6.34	f 7.46	f 11.02	f 2.02	f 5.02	f 8.02	f 10.42
s 8.04	s 5.04	s 2.04	s 11.04	s 7.48	s 5.40	s 11.36	s 6.32	28.27	....†Gorgona.........	s 7.29	s 11.46	s 2.30	s 6.28	s 7.41	s 10.57	s 1.57	s 4.57	s 7.57	s 10.37
s 8.09	s 5.09	s 2.09	s 11.09	s 7.53	s 5.45	s 11.41	s 6.37	29.68	............†Matachin	s 7.24	s 11.41	s 2.25	s 6.23	s 7.36	s 10.52	s 1.52	s 4.52	s 7.52	s 10.32
s 8.14	s 5.14	s 2.14	s 11.14	s 7.58	s 5.49	s 11.45	s 6.42	31.01	............†Bas Obispo..........	s 7.20	s 11.37	s 2.21	s 6.19	s 7.31	s 10.47	s 1.47	s 4.47	s 7.47	f 10.27
s 8.20	s 5.20	s 2.20	s 11.20	s 8.04	s 5.55	s 11.51	s 6.49	32.62	............Las Cascadas.......	s 7.14	s 11.30	s 2.15	s 6.13	s 7.26	s 10.42	s 1.42	s 4.42	s 7.42	s 10.22
s 8.25	s 5.25	s 2.25	s 11.25	s 8.09	s 6.00	s 11.56	s 6.54	34.91	............†Empire...... ...	s 7.09	s 11.25	s 2.10	s 6.08	s 7.21	s 10.37	s 1.37	s 4.37	s 7.37	s 10.17
s 8.30	s 5.30	s 2.30	s 11.30	s 8.14	s 6.05	P. M. s 12.01	s 6.59	35.90	............†Culebra	s 7.04	s 11.20	s 2.04	s 6.03	s 7.16	s 10.32	s 1.32	s 4.32	s 7.32	s 10.12
8.32	5.32	2.32	11.32	8.16	6.08	12.03	7.01	36.52	............†Summit Cabin......	7.01	11.17	2.00	6.00	7.13	10.30	1.30	4.30	7.30	10.10
f 8.39	f 5.39	f 2.39	f 11.39	f 8.23	6.16	12.11	7.09	39.77	....†Paraiso Jct.	6.52	11.09	1.52	5.52	f 7.05	f 10.22	f 1.22	f 4.22	f 7.22	f 10.02
s 8.41	s 5.41	s 2.41	s 11.41	s 8.25	s 6.18	s 12.13	s 7.11	40.15	............†Pedro Miguel	s 6.50	s 11.05	s 1.50	s 5.50	s 7.03	s 10.19	s 1.19	s 4.19	s 7.19	s 9.59
s 8.46	s 5.46	s 2.46	s 11.46	s 8.30	s 6.24	s 12.19	s 7.16	41.66	............Miraflores.	s 6.45	s 11.00	s 1.45	s 5.45	s 6.58	s 10.14	s 1.14	s 4.14	s 7.14	f 9.54
8.52	5.52	2.52	11.52	8.36	6.30	12.25	7.21	43.86	.... †Corozal Jct.	6.39	10.54	1.39	5.39	6.53	10.09	1.09	4.09	7.09	9.49
s 8.53	s 5.53	s 2.53	s 11.53	s 8.37	s 6.31	s 12.26	s 7.22	44.16	............†Corozal.............	s 6.38	s 10.53	s 1.38	s 5.38	s 6.52	s 10.07	s 1.07	s 4.07	s 7.07	s 9.47
f 8.55	f 5.55	f 2.55	f 11.55	f 8.39	f 6.33	f 12.28	f 7.24	44.84	....Camp Diablo.......	s 6.35	f 10.50	f 1.35	f 5.35	f 6.49	f 10.04	f 1.04	f 4.04	f 7.04	f 9.44
9.00	6.00	3.00	12.00	8.45	6.40	12.35	7.30	47.07	Arrive. †Panama. Leave.	6.30	10.45	1.30	5.30	6.45	10.00	1.00	4.00	7.00	9.40
P. M.	P. M.	P. M.	P. M.	A. M.	P. M.	P. M.	A. M.			A. M.	A. M.	P. M.	P. M.	A. M.	A. M.	P. M.	P. M.	P. M.	P. M.
29	27	25	23	21	7	5	3		†Telegraph station. f Flag station. s Stop.	2	4	6	8	20	22	24	26	28	30

GATUN SHUTTLE TRAIN.

DAILY EXCEPT SUNDAY.				STATIONS.	DAILY EXCEPT SUNDAY.			
37	35	*33	31		32	34	36	38
P. M.	P. M.	P. M.	A. M.	Leave. Arrive.	A. M.	P. M.	P. M.	
5.30	4.00	12.20	10.00	..........Colon..........	11.25	3.20	5.20	6.50
s 5.35	s 4.05	s 12.25	s 10.05	..........Mount Hope Cabin..........	s 11.20	s 3.15	s 5.15	s 6.45
s 5.40	s 4.10	s 12.30	s 10.10	..........Mindi..........	s 11.15	s 3.10	s 5.10	s 6.40
s 5.45	s 4.15	s 12.35	s 10.15	..........New Gatun..........	s 11.10	s 3.05	s 5.05	s 6.35
5.48	4.18	12.38	10.18	..........Gatun..........	11.07	3.02	5.02	6.32

*No. 33 will take siding at Gatun.

COMMISSARY DEPARTMENT.

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning December 24.

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	6
Shoulder, neck trimmed off, (4 lbs. and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg, (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing per pound	8
Shoulder for roasting (not under 4 pounds), per pound	14
Loin for roasting, per pound	19
Chops, per pound	24
Cutlets, per pound	28
Pork cuts, per pound	*16
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	9
Corned, per pound	12, 14, 16
Chuck roast, (3 pounds and over), per pound	13
Pot roast, per pound	15
Rib roast, second cut (not under 3½ pounds), per pound	18
Rib roast, first cut (not under 3 pounds), per pound	20
Sirloin roast, per pound	21
Rump roast, per pound	21
Porterhouse roast, per pound	21
Steak, Chuck, per pound	14
Round, per pound	15
Rib, per pound	20
Sirloin, per pound	21
Porterhouse, per pound	21
Rump, per pound	21
Tenderloin, per pound	24

MISCELLANEOUS.

Livers—Beef, per pound	10
Calf, each	60
Half, each	30
Sausage—Pork, per pound	17
Bologna, per pound	12
Frankfurter, per pound	14
Leberwurst, per pound	13
Sweet bread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	40
½ dozen only	26
Bluefish, fresh, per pound	16
Cod, fresh, per pound	10
Halibut, fresh, per pound	15
Oysters, in 1-qt. kegs, keg	50

POULTRY AND GAME.

Chickens—Fancy roasting, large, each	1.50
medium, each	1.30
Fowls, each	70, 82, 93, 1.04, 1 15
Ducks, large, each	1 50
medium, each	1 30
Broilers, each	75
Turkeys, per pound	30
Squabs, each	35
Capons, each	2.60
Geese, fatted, each	2.75
Pheasants, each	70, 1.00
Partridges, each	50
Grouse, each	85

CURED AND PICKLED MEATS.

Ham—English York Cut, per pound	30
German, Westphalia, per pound	36
Sugar cured, per pound	20
Sliced, per pound	23
Half, for boiling, per pound	21
Boiled, per pound	25
Hocks, per pound	‡08
Bacon—Breakfast, whole piece, per pound	27
Breakfast, sliced, per pound	28
Beef, salt, family, per pound	9½
Pork, salt, family, per pound	14
Ox tongues, each	80
Pigs' feet, per pound	10
Tongues, per pound	16
Mutton, mess, per pound	7

DAIRY PRODUCTS.

	Price
Butter—Creamery special, per pound	40
Cheese—Roquefort, per pound	38
Philadelphia Cream, cake	10
Young America, per pound	22
Swiss, per pound	26
Edam, each	1.00
Camembert, in large tins, tin	38
Camembert, in small tins, tin	14
Neufchatel, each	6
Gouda, per pound	34
Parmesan, per pound	35
Milk, Briarcliff, bottle	**25
Buttermilk, bottle	**15
Ice cream, quart	‡25
Ice cream, ½-gallon	‡50

VEGETABLES AND FRUITS.

Beets, per pound	3
Celery, per head	6
Carrots, per pound	3
Cabbage, per pound	3
Cucumbers, per pound	10
Lettuce, per pound	25
½ pound	13
Onions, per pound	3
Potatoes, white, per pound	3
Sweet, per pound	2½
Squash, per pound	4
Turnips, per pound	3
Yams, per pound	3½
Apples, per pound	5
Cranberries, per pound	10
Grapefruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12

*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Misdirected Letters.

Ancon, C. Z., December 23, 1910.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received in the office of the Director of Posts and may be secured upon request of the addressee.:

Abbott, Chester
Alexander, A. E. (pkg.)
Anderson, Chas. H.
Arben, Millie (pkg)
Austizabel, M.
Banks, J. V.
Bartlett, W. J.
Belragen, W. A.
Bennick, T. G.
Benninger, Miss Florence
Berdean, R. W.
Bishop, R. A.
Boylan, Mrs. Mabelle
Bradford, E.
Bryan, Clarence
Bull, Chas.
Bull, F. H.
Butler, T. James
Carpenter, Moore
Chase, Henry B.
Cherry, D. F.
Churchill & Co., A. F.
Clark, Herbert F.
Cooke, Miss Cecilia
Collins, M. J.
Collier, Jr., Geo. W.
Cramp, H. F.
Cutler, Mr. ——
Dahl, Chester T.
Davis, Geo. B.
Dews, Mrs. S. S.(care Wm. M. Morse.)
Dick, Mary, (pkg)
Ermentrout, Robert R.
Erickson, Wm. A.
Fetters, William
Fowle, John
Fullerton, Alexander
Geer, Wm. H. (pkg)
Gorger, Jno. A.
Gillman, R. G.
Goldberg, F
Gutierrez, Joseph (pkg)
Hahn, Chas.
Hammell, Otto
Hanson, Chas. A.
Harfin, W. H.
Harrington, Edward
Hayden, Chas.
Hersh, Sherbin J.
Howell, O.
Hillier, C. H.
Howe, Chas. H. R.
James, Miss Winnie
Janniere, M. E. Alexis
Jecler, Jos. O.
Johnston, Miss Ida
Jones, Thos.
Jordon, J. P.
Kowalski, Max
La Fountain, Frank
Langston, Chas. F.
Langwardt, Niels
Leutel, John (pkg.)
Lewis, Henry W.
Lither, Richard
London, Herman P.
Loraine, David E.
Lynch, Mrs. Frank
Mccombs, Walter
Malone Peter L.
Markham, Isaac S.
Middleton, H.
Montgomery, W. H.
Moran, P. C.
Morgan, C. D.
Moyer, Miss Maude
McAdam, Geo. M.
McDewitte, Martin (pkg)
McLean, James
Neff, John R.
Neville, Mrs. Irene
Nielson, George
Noland, C. Powell
Nolan, Mrs. M. C.
O'Connell, H.
Owen, Brady
Padking, W.
Ragon, Spiro, (Ceylon)
Rayburn, J. L.
Redd, Wm. F.
Rogers, Wm.
Rosenquist, Fred
Rosselot, W. J.
Schantz, Bert
Scott, Jacob
Seward, J. Loyal
Shaughnessy, James
Slepp, Mrs. Norman
Souder, Harry
Smith, Miss Jessie G.
Smith, Geo.
Smith, A. O.
Smith, Russell
Salomon, A. Ricardo
Stanton, Mrs. Clara
Stephen, Otto
Stevenson, J. H.
Stiles, Albert I.
Toland, Miss Alice (pkg)
Vreeland, Mrs. J.
Waite, Miss Cassie
Wagner, C. B.
Walsh, John J.
Waters, Mrs. S. E.
Webster, William
West, Chas. S.
Whaler, John W.
White Alma
Willis, Mrs. A. S.
Wood, Stanley Willis
Yapp, Allic (Ellic)

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending January 4, 1911. (75th meridian time):

Date.	High.	Low.	High.	Low.
	A. M.	A. M.	P. M.	P. M.
December 29	2.15	8.33	2.58	8.52
December 30	2.55	9.13	3.33	9.33
December 31	3.33	9.52	4.05	10.10
January 1	4.05	10.27	4.37	10.45
January 2	4.40	11.00	5.08	11.20
January 3	5.15	11.38	5.42	MDT, 12.00
January 4	5.52	P. M. 12.15	6.20	......

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL

Advance	P. R. R.	Thursday	Dec. 29
Panama	P. R. R.	Wednesday	Jan. 4
Allianca	P. R. R.	Tuesday	Jan. 10
Colon	P. R. R.	Monday	Jan. 16
Advance	P. R. R.	Saturday	Jan. 21
Panama	P. R. R.	Saturday	Jan. 28
Allianca	P. R. R.	Saturday	Feb. 4
Colon	P. R. R.	Friday	Feb. 10
Advance	P. R. R.	Thursday	Feb. 16
Panama	P. R. R.	Thursday	Feb. 23

CRISTOBAL TO NEW YORK.

Colon	P. R. R.	Tuesday	Jan. 3
Advance	P. R. R.	Tuesday	Jan. 10
Panama	P. R. R.	Monday	Jan. 16
Allianca	P. R. R.	Monday	Jan. 23
Colon	P. R. R.	Sunday	Jan. 29
Advance	P. R. R.	Friday	Feb. 3
Panama	P. R. R.	Friday	Feb. 10
Allianca	P. R. R.	Thursday	Feb. 16
Colon	P. R. R.	Wednesday	Feb. 22
Advance	P. R. R.	Tuesday	Feb. 28

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 11th and 28th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Santa Marta	U. F. C.	Thursday	Dec. 22
Sarnia	H.-A.	Saturday	Dec. 24
Tagus	R. M.	Saturday	Dec. 24
Metapan	U. F. C.	Thursday	Dec. 29
Prinz Joachim	H.-A.	Saturday	Dec. 31
Zacapa	U. F. C.	Thursday	Jan. 5
Oruba	R. M.	Saturday	Jan. 7
Sibiria	H.-A.	Saturday	Jan. 7
Almirante	U. F. C.	Thursday	Jan. 12
Prinz Aug. Wilhelm	H.-A.	Saturday	Jan. 14
Santa Marta	U. F. C.	Thursday	Jan. 19
Magdalena	R. M.	Saturday	Jan. 21

COLON TO NEW YORK.

Almirante	U. F. C.	Thursday	Dec. 29
Prinz Aug. Wilhelm	H.-A.	Tuesday	Jan. 3
Santa Marta	U. F. C.	Thursday	Jan. 5
Magdalena	R. M	Monday	Jan. 9
Sarnia	H.-A.	Tuesday	Jan. 10
Metapan	U. F. C.	Thursday	Jan. 12
Prinz Joachim	H.-A.	Tuesday	Jan. 17
Zacapa	U. F C.	Thursday	Jan. 19
Clyde	R. M.	Monday	Jan. 23
Sibiria	H.-A.	Tuesday	Jan. 24
Almirante	U. F. C.	Thursday	Jan. 26

NEW ORLEANS TO COLON.

Turrialba	U. F. C.	Saturday	Dec. 24
Parismina	U. F. C.	Wednesday	Dec. 28
Abangarez	U. F. C.	Saturday	Dec. 31
Heredia	U. F. C.	Wednesday	Jan. 4
Atenas	U. F. C.	Saturday	Jan. 7
Cartago	U. F. C.	Wednesday	Jan. 11
Turrialba	U. F. C.	Saturday	Jan. 14

COLON TO NEW ORLEANS.

Atenas	U. F. C.	Thursday	Dec. 29
Cartago	U. F. C.	Thursday	Dec. 29
Turrialba	U. F. C.	Thursday	Jan. 5
Parismina	U. F. C.	Thursday	Jan. 5
Abangarez	U. F. C.	Thursday	Jan. 12
Heredia	U. F. C.	Thursday	Jan. 12
Atenas	U. F. C.	Thursday	Jan. 19
Cartago	U. F. C.	Thursday	Jan. 19

COLON TO BARBADOS, CALLING AT TRINIDAD.

Tagus	R. M.	Tuesday	Jan. 3
Oruba	R. M.	Tuesday	Jan. 17

The next sailing of the Leyland Line will be as follows: *Jamaican*, on or about December 28, for New Orleans, via Kingston, Ja.

Hamburg-American steamers leave for New York every Tuesday at 10 a. m.; for Jamaica every fortnight, connecting there with steamers for all points in Cuba, for Port Limon every Tuesday, direct, or by way of Bocas del Toro.

Royal Mail steamers leave for New York on alternate Mondays at 5 p. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursday at 3 p. m.; for New Orleans via Port Limon and Puerto Barrios on Thursday at 6 p. m., and for New York on Thursday at 11 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3rd and 20th of each month.

CANAL RECORD

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The Canal Record

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THE CANAL RECORD
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No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Removal of Cranes from Pedro Miguel to Miraflores.

A contract will be made with the McClintic-Marshall Company of Pittsburg to dismantle two berm and four chamber cranes, now in use in the concrete operations at the Pedro Miguel Locks, and reerect them at the Miraflores Locks. About 2,000 tons of steel will be dismantled, and 2,100 tons erected; and the price to be paid, $80,532 is, therefore, about $19 a ton. The McClintic-Marshall Company have the contract for building and erecting the lock gates, and this additional work will be carried on in connection with the gate work. The dismantling will be begun in February, and the contractor agrees to have the cranes reerected at Miraflores in three months from that date.

The cantilever cranes at Pedro Miguel consist of two berm cranes, erected in the forebay of the locks, which convey materials from storage piles and mix them into concrete, and deliver the concrete into cars; and four cantilever cranes in the lock chambers, which lift the buckets of concrete from the cars and deliver the material at the points desired. The contractor will dismantle all structural parts and machinery, including concrete mixers, load them on the cars and unload and reerect at Miraflores, placing all machinery in its proper position, without allowing the performance of this work to intefere with the erection of the lock gates.

In detail, the contract provides for: (1) The removal of two cantilever arms and the accompanying machinery from berm crane "G" at Pedro Miguel, and the erection of one each of these on berm cranes "F" and "E", now partly erected at Miraflores; (2) The dismantling of the balance of berm crane "G" at Pedro Miguel and reerecting it at Miraflores with the additional boom provided, at the same time dismantling one cantilever arm of berm crane "E" at Pedro Miguel and attaching it to berm crane "G" at Miraflores, so as to form a complete crane; (3) Dismantling the remainder of berm crane "E" and reerecting it at Miraflores, together with an additional boom and all machinery, so as to make a complete machine; (4) Dismantling two chamber cranes at Pedro Miguel and erecting them complete, one in each chamber of the upper locks at Miraflores; (5) Dismantling the two remaining chamber cranes and reerecting them complete, one in each chamber of the lower locks at Miraflores.

The concrete work at the Pedro Miguel Locks, as shown elsewhere in this issue, was 57 per cent completed on December 31, and it is advancing at the rate of from 10,000 to 12,000 cubic yards a week. The dismantling of the cranes at Pedro Miguel will be done, as indicated above, in order that each unit may be utilized up to the last moment in the concrete work.

Biological Survey.

Prof. H. A. Pittier of the Bureau of Plant Industry, E. A. Goldman of the Biological Survey, and S. F. Hildebrand of the Bureau of Fisheries, all of Washington, and S. E. Meek of the Field Museum of Natural History of Chicago, arrived on the *Colon*, on December 28, to take up the work of making a biological survey of the Isthmus.

Sale of Scrap Iron in 1910.

More scrap iron was sent from the Isthmus to the States during the year 1910 than during all the previous years, as will be seen by the following table:

	Pounds.
1906	2,591,000
1907	3,414,185
1908	302,600
1909	10,638,684
1910	41,673,840

Of the amount shipped in 1910, all was sent to New York, excepting 1,112,540 pounds, which went to San Francisco. Of the amount sent to New York, 15,708,300 pounds consisted of American scrap, and 24,524,000 pounds of French, 329,000 pounds not being segregated. It was sent in 24 shipments, and the average net price received for 16 shipments up to October 10, was $7.27 per ton. The price received for the scrap sold in San Francisco was $7.15 per ton. In 1909, the average net price received per ton was $10.14.

Concrete Flume in Obispo Diversion.

As soon as the dry season is far enough advanced, the wooden flume in the Obispo Diversion at La Pita, a point immediately north of Empire, on the east side of Culebra Cut, will be replaced by a reinforced concrete flume. This is the point at which the diversion broke through its banks early in the rainy season of 1910, and at which a further break occurred during the heavy rains of December. It is planned to excavate from the toe of the slope all the loose material in the slide that caused the break, and to build the new flume on such foundation as may remain, moving the line eastward a short distance, if necessary, in order to avoid the slide. The highest measured flow in the diversion since the American occupation is 2,325 cubic feet per second, and under the French regime, 2,700 cubic feet per second. The capacity of the flume will be over 3,000 cubic feet per second.

Record for Ladder Dredges.

The *Marmot* of the Pacific Division dredging fleet broke all records for the daily, weekly and monthly output of ladder dredges in the Canal service during December. The output for the month was 219,795 cubic yards; for the best week of 6 working days, 47,693 cubic yards, and for the best day—December 14—8,569 cubic yards. The output for the best 10-day period during the month was 77,838 cubic yards, or an average of 7,783.8 cubic yards a day; for a 25-day period, 183,163 cubic yards. The average per working day over the whole month was 7,326 cubic yards. The above figures are based upon place measurement. The dredge was working the entire month in the approach channel to the site of the new docks at the Pacific entrance to the Canal, excavating earth to a depth of 31 feet below low tide. The crew set deliberately to work on December 1 to exceed all previous records, and by request of the men themselves, the dredge was kept at work every day in the month, excepting Christmas Day. All the dredges work night and day.

The best previous record for old French ladder dredges was made by the Atlantic Division dredge, *No. 5*, in July, 1909, which excavated 176,082 cubic yards.

Forged Letters of Recommendation.

Information has been received from the Washington office of the Isthmian Canal Commission that, during the past few months, quite a large number of applicants for employment on the Isthmus have filed with the employment agent at New York fraudulent letters of recommendation. In one case, an applicant counterfeited the letter heads of two different companies and filed letters of recommendation written on such letter heads purporting to be signed by foremen of such companies. In another case, eight applicants for positions as steel car repairers filed letters of recommendation purporting to be signed by master mechanics of two or more railroad companies. It was found upon writing to the companies involved that the men had never been in the employ of such companies, and that the letters were not authentic.

These .papers were transmitted to the Attorney-General with the request that the men filing the same be prosecuted under Section 28 of the Penal Code. Three of the men involved could not be found, including the one who counterfeited the letterheads. One of the others pleaded guilty to the charge of forgery, under Section 28, and was sentenced to six months in the Elmira Reformatory. The others were indicted for conspiracy under

NOTES OF PROGRESS.

(*Continued.*)

Sections 37 and 28, and all except one pleaded guilty, but the sentence was suspended in view of the fact that they were all young fellows and apparently had not been engaged in any wrong-doing theretofore. The other man refused to plead guilty and his counsel argued for the dismissal of the indictment on the ground that the recommendation in the case was not such a writing as could defraud the United States. Judge Hough, before whom the case was tried, held that the writing came within the provisions of Section 28 of the Penal Code, and the man, having been found guilty by the jury, was sentenced to 40 days in New York County prison.

This appears to be the first time the Government has ever instituted prosecutions in cases of this kind. It is, therefore, believed that as wide circulation as possible be given the fact that the filing with the Isthmian Canal Commission of fraudulent letters of recommendation, for the purpose of obtaining employment under the Commission, constitutes a criminal offense against the United States.

Gatun Dam Spillway.

Concrete was placed in the spillway of Gatun Dam during the week ending December 31, as follows:

Date.	Concrete Laid.	Hours worked.	No. Mixers.
	Cu. Yds.		
December 26—Holiday	....	....	....
December 27	60	5:30	1
December 28	192	7:30	1
December 29	138	6:00	2
December 30	114	4:30	1
December 31	138	5:30	1
Total	642	29:00	....
Previously reported	111,984		
Grand total	112,626		

Porto Bello Crusher.

A statement of the work done at the Porto Bello crusher, by days, for the week ending December 31, follows:

Date.	Hours worked.	Cubic Yards.
December 26	....	....
December 27	8:11	3,005
December 28	8:19	3,437
December 29	8:41	3,400
December 30	8:33	3,561
December 31	8:36	2,473
Total	42:20	15,876

Further Prohibition on Labor Recruiting.

The Government of Panama has made a decree providing:

(1) That any person who shall contract or engage skilled or unskilled laborers in the Canal works shall be punishable by deportation for from two to six years, and that accomplices shall undergo two-thirds of the penalty. The penalty shall be imposed after trial by a judge of the Panama Circuit Court, and an appeal may be taken to the Supreme Court. (2) The agent of a steamship company who sells a ticket for passage to any laborer contracted with, contrary to the law, shall be considered an accomplice. (3) Skilled or unskilled laborers of the Canal works may not be sold a passage ticket unless they present a permit issued by the chief political authority of the port of embarkation, which shall be issued only upon presentation of a proper clearance from the Canal authorities. (4) Every person who shall entice and employ laborers to work in agricultural estates, factories, etc., operated in other sections of the Republic, shall be deported from one province of the Republic to another for the period of time provided by Section 1 of this Act.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

One million cubic yards of concrete had been placed in Gatun Locks at the close of work on December 31, and there yet remained to be placed 1,085 000 cubic yards. The work was begun at Gatun on August 24, 1909, and the mixing and handling plant had not thoroughly found itself until January 1, 1910. In the year just closed, the average amount placed each month was over 73,000 cubic yards. All of the wall and floor of the upper lock chambers have been completed, and the concrete laying is advancing in the upper forebay and the lower gate abutments. About 80 per cent of the masonry for this pair of locks is already in place. In the middle locks, the concreteis being placed in the side and center walls, and three of the four cableways are engaged in this work.

Nearly 50 per cent of the concrete for the whole system of three twin locks has been laid, the exact amount in place at the close of work on December 31 being 1,002,609¼ cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending December 31, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours:

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
December 26 (Holiday)								
December 27	1,837	29:53	7	702	9:40	2	235¼	2,774¼
December 28	1,838	32:08	6	734	9:40	2	302½	2,874½
December 29	1,842	37:06	5	880	11:40	2	367	3,089
December 30	2,180	38:06	6	876	11:04	2	408	3,464
December 31	2,228	37:41	6	786	9:25	2	265¾	3,279¾
Total	9,925	174:54	......	3,978	51:29		1,578½	15,481½
Previously reported	....	....	......	....	....	......	....	987,217¾
Grand total	....	....	......	....	....	......	....	1,002,699¼

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is 57 per cent completed, 479,290 cubic yards, out of a total of 837,400, having been placed at the close of work on Saturday, December 31. The record of concrete laid during each of the five 8-hour working days of last week, follows:

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant. 2-cubic yard mixers.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
December 26 (Holiday)								
December 27	1,104	16:00	3	562	14:00	2	....	1,666
December 28	1,322	21:00	4	574	14:33	3	2	1,898
December 29	1,138	14:00	3	396	10:00	2	....	1,534
December 30	1,180	15:00	3	324	6:33	2	....	1,504
December 31	1,198	16:50	3	496	13:50	3	....	1,694
Total	5,942	82:50	3.2	2,352	58:16	2.4	2	8,296
Previously reported	....	....	......	....	....	......	4,037	470,994
Grand total	....	....	......	....	....	......	4,039	479,290

MIRAFLORES LOCKS.

The record of concrete placed in the upper lock at Miraflores, during the five 8-hour working days of the week ending December 31, follows:

Date.	Auxiliary Plant.										Total.
	2-cubic yard mixers.			⅓-cubic yard mixers.			⅓-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
Dec. 26	Holiday										
Dec. 27	410	7:67	2	33	3:50	2	54	4:50	1	....	497
Dec. 28	440	8:50	2	319	16:50	3	103	8:00	1	55	917
Dec. 29	444	8:00	2	244	15:50	4	24	2:00	1	21	733
Dec. 30	480	8:67	2	354	24:00	4	80	7:00	1	18	932
Dec. 31	402	7:50	2	121	12:00	4	73	6:00	1	35	631
Total	2,176	40:34	2	1,071	71:50	3.4	334	27.50	1	129	3,710
Previously reported	....	....	....	....	....	......	....	....	......	2,242	93,176
Grand total	....	....	....	....	....	......	....	....	......	2,371	96,886

CONSOLIDATION OF STORES.

All Storehouses of Commission and Panama Railroad Now Under One Head.

Effective January 1, 1911, the purchasing, issuing, and handling of material for the Panama Railroad Company was turned over to the Quartermaster's Department, in accordance with the recommendation made by the costkeeping accountant of the Canal Commission on December 20, 1910, which was approved by the Chairman and Chief Engineer on December 24, 1910.

This completes the consolidation of the storehouses on the Isthmus, which was begun on January 1, 1910, when the division storehouses and the handling of freight at dock No. 14 in Cristobal were placed under the Quartermaster's Department. It is expected to so reduce stock that there will be the least possible amount in the stores when the work is completed, and this can best be done by having the supplies under one organization. It is believed that the amount of materials and spare parts in stock on July 1, 1911, will be 20 per cent less than on January 1, 1910, and this reduction will have been made without inconvenience to the Canal work.

The method of making settlement, as adopted, provides that actual payment be made to the Panama Railroad Company for the value of all usable material in stock, such payment to be based on an inventory taken under the joint supervision of representatives of the Panama Railroad Company, and the Quartermaster's Department. The plan further provides that only such material as can be used readily in the work of the Panama railroad and the Canal Commission be transferred, and, that a section of the Panama railroad storehouse in Cristobal be set aside for the storage of obsolete material, the ownership of which will remain with the railroad pending final disposition. It was also determined that all surcharges on material used for repair work for the railroad be eliminated in the future.

The inventory was begun on December 30, under the direction of the Panama Railroad Company's storekeeper, and a representative of the Depot Quartermaster, the latter to have charge of all the material transferred. In making the inventory, stock values are based on the original invoices, and, in case of material manufactured at Canal Commission plants, such as the printing plant. the surcharges are dropped. It is expected that the stock taking will be concluded within the next ten days. With the exception of "live" forms and blanks, and usable stationery, the material turned over to the Depot Quartermaster will be retained at the old Panama railroad storehouse, which will be handled as an adjunct to the Depot in the same manner as the dry dock store.

The reimbursement feature of the arrangement provides for the payment by the Panama Railroad Company to the Canal Commission of the lump sum of $6,000 monthly to cover the expenses of purchasing, unloading, handling, and distributing the railroad material on the Isthmus. This amount, it is believed, will compensate the Canal Commission for the service rendered, and it will result in a saving to the railroad company of about $750 a month. Added to this saving, will be the interest on the value of stock formerly carried by the railroad, which, figured on the basis of $500,000 at the rate of four per cent, would amount to $20,000 per annum. The new arrangement will also result in a reduced labor cost.

PERSONAL.

Mr. Elmer Lawrence Corthell, the eminent American engineer. accompanied by Mrs. Corthell, has spent about a fortnight on the Isthmus, during which he has visited all portions of the Canal work. Mr. and Mrs. Corthell sailed for the States on January 3.

Among the visitors on the Isthmus last week were: Colonel C. P. Anderson, U. S. A.; Brig.-Gen. E. S. Godfrey, U. S. A., retired, and daughter; Brig.-Gen. Charles Morton, and Mrs. Morton; the Hon. Scott Ferris, Member of Congress from Oklahoma, and Mrs. Ferris, and the Hon. Joseph F. O'Connell, Member of Congress from Massachusetts, and Mrs. O'Connell.

The Venerable Archdeacon Henry B. Bryan has resigned from the service of the Isthmian Canal Commission, and will sail from Colon on Thursday, January 5, on the *Santa Marta*, for Jamaica, where he will spend a month at Kingston, as the guest of the Archbishop of the West Indies.

The Rev. J. H. Bicknell, who succeeds Archdeacon Bryan as Commission chaplain to Ancon Hospital, and rector of St. Luke's Church, entered upon his duties on January 1.

Obituary.

John S. Dabbs, who was in the employ of the Atlantic Division at Gatun, and who had been on the Isthmus a little over a year, died at Colon Hospital on December 24, after a week's illness. He was 21 years of age, single, and is survived by his father, John S. Dabbs, Sr., who lives at Quitman, Miss.

The death of Fleming Bremner, a naturalized American, who was in the Canal service on the Isthmus from November, 1905, until November, 1908, occurred at Cupar-Fife, Scotland, on November 22, 1910. He was employed in the old Division of Municipal Engineering, but his health failing him, he went to Scotland, where he has since resided. He was about 48 years of age, and is survived by a wife and son, who live in California.

John Crawford, an employe of the Mechanical Division, died at Ancon Hospital on December 26, after an illness extending a little over two weeks. He was 51 years of age, married, and had been on the Isthmus five years, his last residence being at Las Cascadas. He is survived by his wife.

David C. Simons, employed in the Subsistence Department at Cristobal, died at his home on Colon beach on December 26. He was 56 years of age, married, and had been on the Isthmus nearly three and one-half years. He is survived by his son, A. E. Simons, who lives on Colon beach.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at the Hotel Tivoli, Ancon, C. Z., on Sunday, January 8, 1911, at 7.30 p. m. The program follows:

1 March—*Hudson-Fulton Celebration.*
Arranged by S. Jorge A.
2 Selection—*Madam Sherry*..............Hoschna
3 Caprice—*The Whistler and His Dog*.......Pryor
(By request)
4 Overture—*Stradella*....................Flotow
5 Medley Selection—*My Southern Rose*. .Von Tilzer
6 March—*Tannhauser*...................Wagner
7 Waltz—*Wedding of the Winds*..............Hall
8 Selection—*Carmen*.......................Bizet
9 March—*Festal Day*.......................Roux

CHAS. E. JENNINGS, *Musical Director*.

The next concert will be given at Paraiso on Sunday, January 15, 1911, at 2 p. m.

SOCIAL LIFE OF THE ZONE.

Women's Clubs—Miscellaneous Events.

The January meeting of the Canal Zone Federation of Women's Clubs will be held at the Hotel Tivoli on January 31. The character of the convention will be as usual—Business meeting in the morning; program and addresses in the afternoon. The guest for the occasion will be Miss Helen Varick Boswell, organizer of the Canal Zone clubs and chairman of the child labor and industrial committee of the General Federation of Women's Clubs. Miss Boswell will sail from New York on the steamer *Advance* on January 21, and will arrive on the Isthmus on the 28th. Returning, she will sail on February 23. Mrs. Hiram J. Slifer is also expected to be at the convention to give her report as delegate to the biennial convention at Cincinnati, in June, 1910.

An election of officers was held by the Daughters of Rebekah on Friday evening, December 22, the following being chosen: Noble grand, Mrs. Louise Lots; vice grand, Mrs. Clara Beetham; financial secretary, Mrs. L. M. Cole; treasurer, Mrs. L. Gerstey. Mrs. Annie L. Calvit is past noble grand. An open installation of officers will be held in the near future.

A Canal Zone chapter of the auxiliary order of the Eastern Star is to be organized. Any one wishing to become a member is requested to forward her name to the official organizer, Mrs. S. E. Calvit, Gorgona, before January 18. The first list will be closed on that date. Those eligible to membership are the mothers, wives, sisters, and daughters of master Masons.

Improved Order of Red Men.

Sunday, January 8, the body of Brother Murphy, a member of Cocles Tribe, No. 3, will be brought from Ancon Hospital on the train that leaves Panama at 10 a. m., for burial in Mount Hope cemetery. Funeral services will be held immediately upon the arrival at Mount Hope, about 12 o'clock. Members of all the tribes, visiting Red Men, and members of the Degree of Pocahontas, are requested to attend this funeral in respectful memory of a beloved member of our order. The members may wear the regalia of their ranks, in addition to funeral badges, etc.

The raising of chiefs for the ensuing term, which was to be held on the above date, will be postponed until the following Sunday, January 15. The place and date of meeting will be made known later.

W. H. KROMER, *D. G. I.*
Cristobal, C. Z., January 2, 1911.

I. O. P. K.

At the last regular session of Empire Court, No. 1, I. O. P. K., held at Kangaroo hall, Empire, the following officers were elected to serve for the first half of 1911: Judge, the Rev. W. H. Decker; prosecuting attorney, F. A. Sickler; defendant attorney, C. L. Woodman; chaplain, H. Mitchell; comptroller and clerk, E. W. Stolberg; sheriff, W. H. Bolen. The installation of these officers will take place the second Saturday in January, and all Kangaroos are requested to attend.

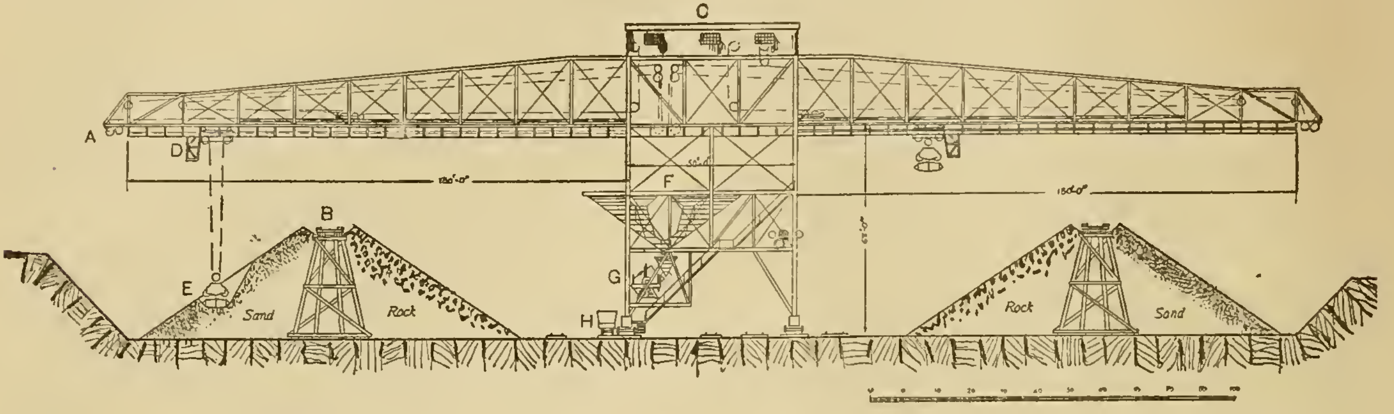
Order of Isthmian Conductors.

The next regular meeting of the O. I. C. will be held at Las Cascadas lodge hall at 2.30 p. m., Sunday, January 8. All members are requested to be there.

PACIFIC LOCKS PLANT.

Concrete Handling and Mixing Cranes—Method of Operation.

The construction plant for building the locks at Pedro Miguel and Miraflores consists of four berm cranes and four chamber cranes. It was manufactured by the Wellman-Seaver-Morgan Company of Cleveland, O., and was primarily designed for the lock work at Miraflores, although equally suited, with the exception of certain modifications in the berm crane structures, to the requirements at Pedro Miguel. The berm cranes are so-called from the fact that they are built to travel on two 5-foot gage tracks, 50 feet from center to center, located on berms outside of, and parallel with, the lock walls. On account of the height and the insecure character of the banks on either side of the lock pit at Pedro Miguel, these cranes could not be placed so as to travel along berms, but were erected in the north forebay, just above the lock chambers. The banks of the upper lock at Miraflores are well adapted for the purpose, and there, the crane tracks parallel the lock site. The same method of installation will obtain when the lower lock is ready for the cranes.



ARRANGEMENT OF BERM CRANES AT PEDRO MIGUEL LOCKS.

Key:
- A—Traveling trolley.
- B—Storage trestle for rock and sand.
- C—Machinery house containing electrical operating apparatus.
- D—Operator's cab.
- E—2½-cu. yd. Hewlett excavating bucket.
- F—Bins for sand and rock.
- G—Two 2-cubic yard concrete mixers.
- H—Small flat cars for transferring buckets of concrete from berm to chamber cranes.

The work of assembling the permanent handling plant at Pedro Miguel, consisting of two berm cranes and four chamber cranes, was begun in October, 1909. On March 15, 1910, one of the berm cranes and one of the chamber cranes were placed in service, and during the following month, the entire west unit, consisting of one berm crane and two chamber cranes, was in operation. The representatives of the contractors on the Isthmus fulfilled their promise to have the entire Pedro Miguel plant ready for service by July 1, 1910, although owing to preliminary trials and to a delay in the completion of the construction trestle in the east chamber of the locks, all of the cranes were not in active service handling concrete until the week beginning July 12.

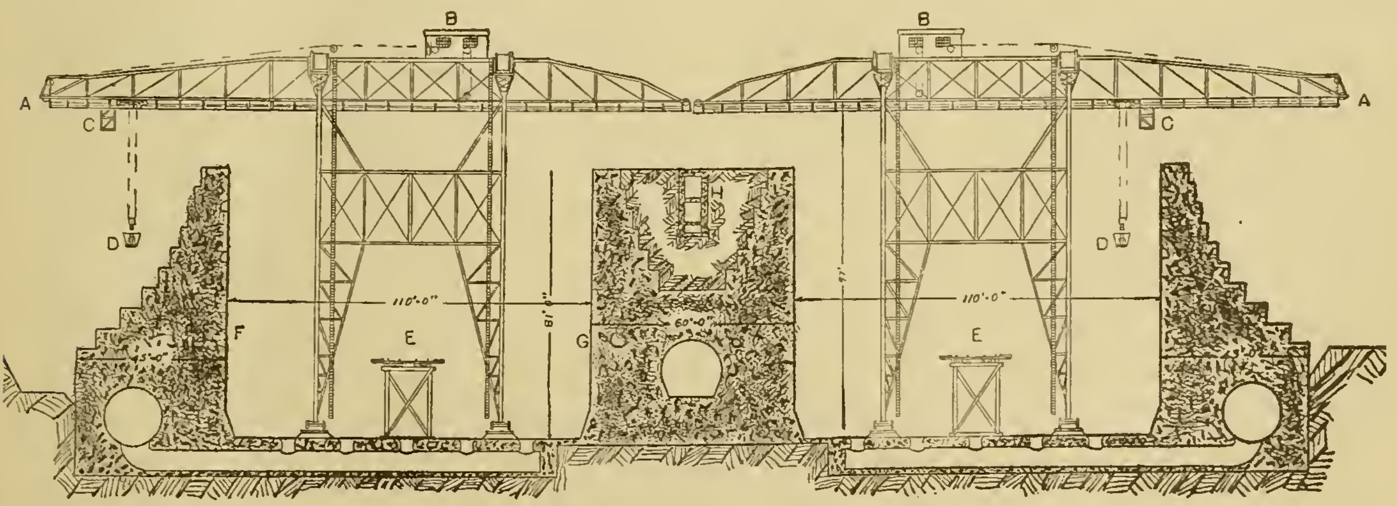
The berm cranes at Pedro Miguel are of the balanced cantilever type, 62 feet 6 inches high from the top of the rail to the bottom of the cantilever and 90 feet to the top of the machinery house, equipped with double fixed cantilevers 150 feet long. The towers which support the cantilever arms are 40 by 50 feet, supported by two box girders, each of which is carried on 16 axles, or 32 wheels per track. The truss in the upper part of the tower supports the operating machinery, the houses enclosing it, and, in conjunction with the cantilever arms, the underhung trolley tracks for conveying the sand and crushed rock. There are two trolleys to each crane and each trolley carries a 2½-cubic yard Hulett excavating bucket of the clamshell type, which supplies sand and crushed rock from storage piles extending along each side of the forebay directly beneath the outer ends of the cantilever arms. Each trolley has a rated capacity of 50 cubic yards of sand and 100 cubic yards of crushed rock an hour delivered to the bins. Each tower is provided with four bins, two for sand and two for crushed rock of 15 cubic yards capacity each, and are so arranged that the buckets will discharge into them without overlapping in their travel.

Underneath the rock and sand bins in each crane is a housed-in platform where the bags of cement are opened and emptied into hoppers. The cement is transferred from box cars to the platform by mean of an elevator and a conveyor, with a capacity of 800 bags an hour. The elevator is operated on a set of cogs in conjunction with the conveyor, and is fitted with lifts about three feet apart, each capable of holding two bags. When the bags reach the floor of the platform, they are dropped on the conveyor, a kind of moving sidewalk, which transports them to bins on the opposite side. While in transit two men sever the strings and place the bags in a flat position convenient for handling by the men who empty them. The measuring hoppers, which supply the concrete mixers, are located directly below the cement room. Each contains three bins, or compartments—for sand, crushed rock, and cement, respectively, with a chute leading into each bin from the storage receptacles above. The chutes are provided with doors, the doors to the cement and sand chutes being operated by turning a wheel, and those to the rock chutes by manipulating a lever. Each of the Pedro Miguel berm cranes is provided with two 2-cubic yard cube concrete mixers, situated in the tower bases. They discharge directly into 2-cubic yard buckets on narrow gage flat cars of two 2-cubic yard buckets capacity each, which are hauled into the lock chambers by Porter locomotives of 36-inch gage. Operators on the mixer platform control the mixer discharges by means of compressed air, and, in addition, work the gates that admit the raw material into the mixers from the measuring hoppers. Water is fed into the mixers from automatic measuring tanks installed in the towers. A time recording instrument, operated by electrical contact, has been installed on one of the berm crane mixers, and the other mixers will be similarly equipped shortly. It records the time consumed in each mixing operation, and also the time occupied in dumping into the concrete buckets. The data is for use in keeping the records in the division office.

The motive power for the machinery on each of the berm cranes is supplied by seven Westinghouse 500-volt direct current motors. Each mixer is belt-driven by a 40-horsepower shunt wound motor, making 615 r. p. m. The traverse motion for the cantilever trolley is operated by a 21-horsepower compound wound motor at a maximum speed of 480 feet a minute. The hoist motion for the cantilever trolley is operated by a 65-horsepower compound wound motor, capable of giving a hoisting speed of 200 feet; a lowering speed of 250 feet, and a speed of bridge travel of 25 feet a minute. The cement elevator and conveyor are driven by a 15-horsepower compound wound motor, making 815 r. p. m. The hoist and trolley motors are controlled by Westinghouse type A magnetic switch crane controllers, and on both of these movements dynamic braking is used. The master switches are located in the operators' cabs which travel with the buckets along the bridge. On the hoist motor switch are three points for hoisting and four points for lowering the bucket; three of the lowering points are for dynamic braking, and the fourth point starts the motor in a downward direction in case the bucket will not descend unaided. The trolley master switches have two points for both forward and reverse movements. Dynamic braking occurs only when the master switch is in the off position and motor is generating sufficient E. M. F. to operate a counter E. M. F. coil, which, in turn, controls a dynamic braking switch.

The berm cranes are moved from place to place along their tracks by means of steel ropes which pass from the travel drums in the machinery house over 36-inch deflecting sheaves in the top and bottom of the tower, thence to deadmen situated at points on the tracks, so as to give 700 feet of travel. One of the hoist motors furnishes the motive power for the tower movement. This motor can be disconnected from the hoisting drum and connected to shaft which operates the movement of the tower, by hand operated clutches. A change-over switch is mechanically connected to the lever which controls the clutches, so that when the motor is connected for tower movement, the hoist master switch in the operator's cab is cut out, and a similar one, situated in the machinery house, is connected in such a manner that it will work the clapperboard used in the regular hoisting operation. The arrangement is such that it is impossible to have the hoist master switch connected when the clutches are set for the tower movement, and *vice versa*. Stop motion switches are provided, which can be set to limit hoist and trolley travel to any point desired.

The chamber cranes are mainly designed to place the concrete in the lock walls but are also extensively used in transferring wood and steel forms from one point to another. Each crane is 97 feet 6 inches high from the top of the rail to the bottom of the cantilever, and about 115 feet high to the top of the machinery house. Each tower is 56 by 40 feet wide, and is supported by four heavy trucks of four wheels each, which travel on two 5-foot gage tracks 40 feet center to center, extending longitudinally through the lock chambers. There are two cantilever arms to each tower, one extended toward the center wall with a length of 53 feet 6 inches, and one extended toward the side wall with a length of 81 feet 6 inches. The arms, together with the tower trusses, support a line of underhung trolley tracks which form a continuous runway of 191 feet. The cranes handle buckets of the double leaf drop-bottom type, having a capacity of two cubic yards each. They are dumped under control of the operator in his cab by means of a hold line, operated by a $3\frac{1}{4}$-horsepower series wound motor located on trolley. The electrical equipment on these cranes is of the same type as that on the berm cranes. The tower movement, however, is operated by a separate motor controlled with a standard hand operated controller located on the end of the tower, so as to be accessible from the operator's cab. The four chamber cranes are designed to pick up the buckets, deliver them to the lock walls, dump their contents and return the empties to the cars at a combined average rate of 320 cubic yards of concrete an hour.



ARRANGEMENT OF CHAMBER CRANES AT PEDRO MIGUEL LOCKS.

Key:
A—Traveling trolleys.
B—Machinery houses containing electrical operating apparatus.
C—Operators' cabs.

Key:
D—2-cu. yd. bucket for placing concrete.
E—Double-track trestle from which the concrete buckets are served.

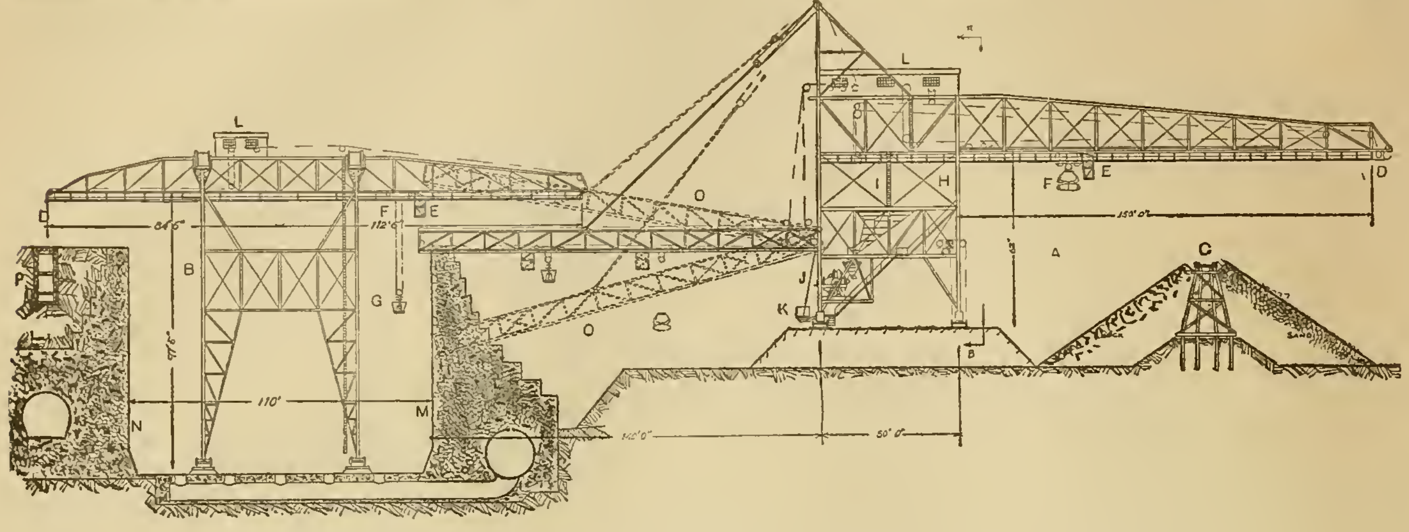
Key:
F—Side walls of locks, showing side wall and floor culverts.
G—Center wall and center wall culvert.
H—Operating tunnel.

MIRAFLORES PLANT.

The present plans contemplate the removal of the berm and chamber cranes to Miraflores as soon as all concrete that is massive in character in the locks at Pedro Miguel has been placed, which will probably be within the next four or five months. The arrangement of the chamber cranes at Miraflores Locks will be similar to that at Pedro Miguel, but the positions and method of operating the berm cranes will be quite different. Four berm cranes will be in service there, consisting of the two at Pedro Miguel, which are to be modified when the transfer is made to meet the changed conditions, and of the two recently erected at Miraflores, one on either side of the upper lock. Each crane of the Miraflores type has one fixed cantilever arm 150 feet long extended over the storage pile, but on the side nearest the locks there is a swinging boom 144 feet in length, so hung that it may be operated under full load in a horizontal position; in a position inclined 15 degrees below the horizontal, and in a position inclined 10 degrees above the horizontal. The upper position is required for filling the top courses, or lifts, of the lock walls. The boom can be raised and lowered to provide clearance in passing the chamber cranes, and, in addition, can be made to swing through a horizontal arc either side of the center, so that the outer end will have a movement of 50 feet.

The operation of the cranes along the berms of the locks dispenses with the transportation system in use at Pedro Miguel, and makes it possible for them to place all the concrete in the side walls. It is proposed to use but one mixer to each of the berm cranes, but provision has been made for the installation of two, if desired. The boom trolley will deliver concrete in 2-cubic yard buckets, either into the forms of the outer walls, or to a point of convenient transfer to the chamber crane buckets. In the operation the trolley will deposit a bucket on a swinging platform, which will then be swung horizontally to either side under the mixer spout. After receiving the concrete at the mixer the bucket will be swung back to its original central position, thence hoisted, delivered and emptied. In the construction of the center wall, the concrete from the bucket on the berm crane will be dumped into the bucket of the chamber crane by means of a transfer chute conveniently situated on the outside walls. The spout of the transfer chute is hinged and counterbalanced, and will be swung into position only after the bucket of the chamber crane has been deposited in its proper position to receive the concrete. The chute is also provided with a gate for temporarily retaining the concrete, so that the bucket on the berm crane will not be delayed in case the chamber crane bucket is not in place. The chute is made of steel, mounted on three stiff legs, each having a ball and socket jointed base plate, so as to adjust themselves to any uneven surface. It can be moved from place to place rapidly by the trolley on the chamber crane. Upon receiving the concrete from the transfer chute, the chamber crane bucket will be carried by trolley to the center wall and there emptied. It is estimated that under this arrangement each of the cranes will be capable of handling and delivering concrete to the walls at a maximum rate of 100 cubic yards an hour.

The motive power for the movements of the boom and trolley on each berm crane will be furnished by a 47-horsepower motor. For controlling these movements two master switches, one change-over switch, and one clapperboard will be installed. The trolley master switch will have three different sets of contacts; one set is used when the boom is in a horizontal position; one when the extreme end is below horizontal, and one when it is above horizontal. Three sets of contacts are made necessary on account of the different dynamic braking requirements for



ARRANGEMENT OF BERM AND CHAMBER CRANES AT MIRAFLORES LOCKS.

Key:
A—Berm crane.
B—Chamber crane.
C—Storage trestle for sand and rock.
D—Traveling trolleys.
E—Operator's cab.
F—2½-cu. yd. Hewlett excavating bucket.

Key:
G—2-cu. yd. bucket for placing concrete.
H—Rock bin.
I —Sand bin.
J —Two-cubic yard concrete mixers.
K—Swinging platform.
L —Machinery houses containing electrical operating apparatus.

Key:
M—Side wall of lock showing floor and side wall culvert.
N —Center wall of lock showing center culvert.
O —The dotted positions of boom show vertical range at which it may be operated.
P —Operating tunnel.

the different positions of the boom. The remainder of the electrical equipment on the berm cranes, as well as that on the chamber cranes has been previously described.

The work of laying concrete in one of the side walls of the upper lock at Miraflores is already advancing, and by the time the cranes are ready to be transferred from Pedro Miguel, may reach the point where the services of but two of the chamber cranes will be required in this lock, in which case, the two others will be reassembled and made ready for the work in the lower lock. After lock construction in the Pacific Division is completed, provision has been made for converting the berm cranes into dock cranes by omitting two panels and raising the swinging boom to such a position as to form a continuous runway with the tower trusses and cantilever arms, thus allowing the trolley to handle material from vessels to cars and docks.

BASEBALL.

PANAMA CANAL LEAGUE.

RESULTS OF GAMES, JANUARY 1.

At Ancon— Ancon, 12; Marines, 7.
At Empire—Empire, 2; Gorgona, 6.
At Colon— Commissary-Subsistence, 2; Atlantics, 1.

RESULTS OF GAMES, JANUARY 2.

At Ancon— Marines, 8; Ancon, 25.
At Empire—Gorgona, 0; Empire, 4.
At Colon— Atlantics, 3; Co'missary-Subsistence, 11.

STANDING OF CLUBS.

	P.	W.	L.	P.C.		P.	W.	L.	P. C.
Ancon...	2	2	0	1.000	Gorgona.	2	1	1	.500
Com-Sub.	2	2	0	1.000	Atlantics	2	0	2	000
Empire..	2	1	1	.500	Marines.	2	0	2	000

SCHEDULE FOR JANUARY 8.

At Ancon— Gorgona vs. Ancon.
At Empire—Atlantics vs. Empire.
At Colon— Marines vs. Commissary-Subsistence.

SUMMARIES OF GAMES JANUARY 1.

Marines	AB.	H.	PO.	A.	E.	Ancon.	AB.	H.	PO.	A.	E.
McC'be,2b,c	5	1	6	0	1	R.P.Dre'n,cf	4	3	1	0	0
Maguire,1b	5	3	10	0	2	L.Dren'n,rf.	4	2	0	0	0
Shepard,3b.	5	1	1	1	0	Potter,ss...	4	2	1	1	0
Silke,lf....	5	2	0	0	0	Tinsley,lf,2b	5	1	0	0	0
McKel'y,cf.	5	2	1	0	1	Pearman,3b	2	0	1	3	1
Fields,ss...	4	1	2	2	1	Nygren,1b..	4	2	9	0	0
Richards,c.	1	1	2	1	0	Smith,2b,3b	4	0	1	3	1
Lang,rf....	5	0	0	0	0	Caldwell,c..	5	1	9	1	1
Burns,p ..	1	1	1	2	2	Russell,p...	3	1	2	3	1
Austin,2b..	3	0	1	0	0	Hunter,cf	2	1	2	0	0
Munsen,p..	3	1	0	4	0	VanZant,lf	1	0	0	0	0
Kenyon*...	1	1	0	0	0	Hull,rf.....	1	0	1	0	0
Jordan†...	0	0	0	0	0						
Totals...	43	14	24	10	7	Totals...	39	13	27	11	4

Marines .	0	2	0	0	1	0	1	0	3— 7
Ancon.........	2	2	2	4	0	0	1	1	x—12

*Batted for Austin in 9th.
†Batted for Fields in 9th.

Runs—Marines: McCabe, Shepard, Silke, McKelvey, Fields (2), Burns. Ancon: R. P. Drennan (2), L. Drennan, Potter (2), Pearman, Nygren (2), Smith, Russell (3). Two base hits—McCabe, Maguire, Potter(2), Nygren. Sacrifice hits—Potter, Smith. Stolen bases—Maguire (2), Shepard (2), Silke, Jordan, R. P. Drennan (3), Potter, Pearman, Caldwell (2). Struck out—By Burns 4; by Munsen, 4; by Russell, 8. Hit by pitcher—By Burns, Pearman; by Munsen, Nygren' Russell. Left on bases—Marines, 10; Ancon, 11. Umpire—Irwin. Time of game—2.20. Scorer—J. K. Munroe.

C.-S.	AB.	H.	PO.	A.	E.	Atlantics.	AB.	H.	PO.	A.	E.
Sullivan, lf.	4	0	0	0	0	Edwards, 1b	3	0	7	0	0
Breiv'gle,2b	2	0	2	1	0	Dou'erty,2b	3	0	2	1	0
Curtis,ss...	3	1	2	3	1	Herring,3b.	3	0	2	1	0
Mosher,1b.	2	1	7	1	0	Hennessy,ss	3	0	3	4	0
McCusty,c.	3	0	12	2	0	Gamble,lf..	3	0	1	0	0
Coffin,rf...	4	0	3	0	0	Osborne,cf..	3	0	0	0	0
Hodnett,3b	2	0	0	1	1	Sullivan,rf..	3	1	1	0	0
Jones,cf...	2	0	0	0	0	Cushing,c..	3	0	8	0	0
Horrigan,p.	3	1	1	3	0	Davis,p....	3	0	0	5	0
Totals...	25	3	27	11	2	Totals...	27	1	24	11	0

Com.-Subsistence...	2	0	0	0	0	0	0	0	x—2
Atlantics..........	0	0	0	1	0	0	0	0	0—1

Runs—C.-S.: Breivogel, Mosher; Atlantics: Edwards. Runs earned, C.-S., 2. First base on error—Edwards. Home run—Mosher. Sacrifice hit—Dougherty. Stolen bases—Curtis (2), Edwards, Sullivan. Bases on balls—Off Horrigan, 1; off Davis, 8. Struck out—By Horrigan, 9; by Davis, 5. Hit by pitcher—Breivogel, Curtis. Double plays—Davis to Herring to Edwaıds; Dougherty to Hennessy to Edwards. Umpire—Mills. Time of game—2.10.

SUMMARIES OF GAMES JANUARY 2.

C.-S.	AB.	H.	PO.	A.	E.	Atlantics	AB.	H.	PO.	A.	E.
Sullivan,lf..	5	1	0	0	0	Edw'ds,1b,p	4	1	4	2	0
Breiv'gle,2b	3	1	3	1	0	Gamble,lf,1b	4	0	0	0	1
Curtis,ss...	3	1	0	2	0	Herring, 3b.	3	0	4	1	2
Mosher,1b.	5	1	10	0	1	Hennessy,ss	4	0	4	1	1
McCusty,c.	2	1	11	1	1	Dou'erty,2b	3	0	1	1	2
Coffin,rf...	4	1	1	0	0	Sullivan,cf..	1	0	1	1	1
Hodnett,3b	4	1	1	0	1	Osborne,rf..	4	0	0	0	0
Jones,cf...	5	1	0	0	0	Cushing,c..	2	0	7	4	0
Kellogg,p..	3	0	1	7	0	Johnston,p.	1	0	0	8	0
						Davis,p....	0	0	1	1	0
						Thompson,c	1	0	1	1	0
						Purchase,lf.	0	0	0	0	0
Totals...	34	8	27	11	3	Totals...	27	1	*23	20	7

Com.-Subsistence..	0	0	0	0	1	6	2	2	x—11
Atlantics.........	0	0	0	1	0	0	1	0	1 3

Runs—C.-S.: Breivogel (2), Curtis, McCusty, Coffin (2), Hodnett (2), Kellogg; Atlantics: Sullivan (3). Runs earned—C. S., 3. First base on errors—Edwards, Sullivan, Curtis (2), Coffin (2) Jones (2), Kellogg. Sacrifice hits—Mosher, Edwards, Dougherty. Stolen bases, Mosher, Edwards, Sullivan(3). Bases on balls—Off Kellogg, 6; off Johnson, 8; off Davis, 3. Struck out—By Kellogg, 10; by Johnson, 7 in 5⅔ innings; by Edwards, 1. Hit by pitcher—By Kellogg: Sullivan, Herring, Dougherty, Thompson. Left on bases—C.-S., 8; Atlantics, 8. Wild pitch—Kellogg, 1; Davis, 1. Passed balls—Cushing, 1. Umpire—Irwin. Time of game—2.30. Scorer—J. P. Mead. Attendance—300.

*Jones out at 2d base in 2d inning for taking that base when held by McCusty. Davis ran for Herring in 3rd inning.

Marines.	AB.	H.	PO.	A.	E.	Ancon.	AB.	H.	PO.	A.	E.
McCabe,c..	5	1	9	1	0	R.Dren'n,cf	4	3	0	0	0
Maguire,1b	3	1	12	0	1	L.Dren'n,rf	3	3	0	0	0
Shepard,3b.	4	1	0	2	2	Tinsley,lf,rf.	7	3	1	0	0
Silke,lf....	4	0	0	0	0	R.Smith,1b.	6	4	8	0	0
McKel'y,cf.	5	0	2	1	3	Potter,ss...	6	4	2	1	2
Fields,ss...	5	1	0	0	1	Pearman,3b	6	2	3	2	2
Austin,2b..	5	4	1	0	2	J.Smith,2b.	2	0	0	0	2
Kenyon,rf,p	4	1	0	0	0	Snyder,2b..	3	0	1	4	1
Buckley,p..	1	0	0	5	0	Caldwell,c..	7	4	10	4	0
Burns,p...	1	0	0	1	0	Hull,p.....	3	2	0	2	0
Jordan,rf..	1	0	2	0	0	Wrightson,p	2	0	0	0	1
						Hunter,cf..	2	0	2	0	0
						VanZant,lf.	3	1	0	0	0
Totals...	38	9	*26	10	9	Totals...	54	26	27	13	8

Marines..........	1	0	0	0	3	2	0	2	0— 8
Ancon............	3	4	4	6	0	8	0	0	0—25

Runs—Marines: McCabe, Maguire (2), Austin (2), Kenyon, Buckley, Burns; Ancon: R. Drennan (3), L. Drennan (3), Tinsley (4), R. Smith (4), Potter (2), Pearman (2), Snyder, Caldwell (2), Hull (2), Van Zant (2). Runs earned—Marines, 1; Ancon, 15. Two base hits—Austin, L. Drennan, Tinsley, R. Smith, Potter, Caldwell. Sacrifice hits—Shepard, Hunter, L. Drennan, J. Smith, Wrightson. Stolen bases—McCabe (2), Silke, McKelvey, Austin, Kenyon, Van Zant, R. Smith (2), Potter, Caldwell (2). Bases on balls—Off Buckley, 1; off Burns, 2; off Hull, 1; off Wrightson, 1. Struck out—By Buckley, 7; by Burns, 2; by Kenyon, 1; by Hull, 7; by Wrightson, 2. Hit by pitcher—By Hull, Maguire; by Wrightson, Buckley, Silke. Left on bases—Marines, 9; Ancon, 10. Double plays—Tinsley to R. Smith. Umpire—Bayne. Time of game—2.20. Scorer—J. K. Munroe.

Hull pitched 4 innings, Wrightson, 5; Buckley, 5; Burns, 2; Kenyon, 2.

* Out hit by batted ball.

The summaries for the Empire-Gorgona games were received too late for publication in this week's issue of THE CANAL RECORD.

EMPIRE, C. Z., January, 3, 1911.

Mr. Sam Mills, Gorgona.
Sir:

Having failed to appear and umpire the game of ball at Empire park on yesterday, to which you were assigned, you are hereby dropped from the list of umpires.

Respectfully,
MILTON S. HATHAWAY,
Secretary, Panama Canal Baseball League.
By direction of Executive Committee.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

The standing in the bowling tournament follows:

Name.	Won.	Lost.	Handicap.
Bayne	2	4	100
Case	2	3	45
Conlan	4	2	100
Dubois	1	6	100
French	5	1	55
Hall	5	1	45
Hepler	5	3	45
Soderberg	3	3	45
Silver	3	4	81
Thomson	3	4	86
Clark	2	4	45

The following are the winners in the duckpin tournament: Mr. Fredericks won the greatest number of games, and made the high average, and Messrs. Case and Lindsay tied in the second greatest number of games won. Lindsay won in the roll-off.

Bowling scores of 200, or over, during the month of December were made as follows: Case, 226, 223, 211, 211, 203, 200; Huttlemeier, 225, 209, 201; Dougherty, 222, 214, 211, 201; Cohen, 222; Cushing, 215, 208, 201; Fleischman, 211; Anderson, 209; McIlvaine, 203; Herrington, 201; Eberly, 234. Eberly also won the prize for monthly high score, which is a bowling ball.

Scores of 100, or over, during the month in duckpins were made as follows: Case, 104, 101, 106, 101, 104, 109, 110; Cornthwaite, 102, 101, 104, 103, 100; Hill, 101, 136, 105, 115; Hurst, 101, 120, 107, 107; Cushing, 105, 103; McIlvaine, 109, 112; Huttlemeier, 105; Eberly, 105; Lindsay, 108; Kersey, 102, 101; Fredericks, 106, 106, 103; Fleischman, 102, 101; Sickler, 100. The high score for the month was made by Hill, 136.

EMPIRE.

At the meeting of the literary and debating society, held on Friday evening, December 30, the following officers were elected for the coming six months: President, O. Harlan; vice-president, J. R. McNiel; secretary and treasurer, Mark A. Hall; executive committee, Messrs. Harlan, Dickson, Forman; program committee, Messrs. McNiel, Brown, Dohrmann; membership committee, Messrs. Hall, McLean, and Zacharias.

Empire defeated Gorgona in three games on the Empire alleys Saturday night, December 31, by the following scores:

Empire.				Gorgona.			
Gustavson	194	215	159	Roper	150	124	192
Potter	200	139	177	Otis	161	165	134
Bardelson	164	201	160	Peterson	168	151	176
Pearson	198	192	182	Bordt	173	155	139
Huson	189	148	210	Varenkamp	219	161	169
Total	945	895	888	Total	871	756	810

Notice is hereby given all participants in the unfinished pool tournament that the remaining games must be played before January 15.

An informal watch night party was held on Saturday evening, December 31. Light refreshments were served, and favorite songs were sung.

GORGONA.

About 70 new books have been received from the States and are now on the library shelves. The larger portion of these books are late popular fiction.

F. G. Swanson led the discussion club on Wednesday night, January 4, his topic being "The Impracticability of Socialism." All the men in Gorgona are invited to these discussions, which are held every Wednesday night at 7.30 in the game room. If any one has a topic which he would like to have discussed, please hand it to C. Patterson, or H. W. Otis.

The Spanish classes will resume work on Monday night, January 9, at which time, Mr. Cubiluous, the teacher, will have returned from the hospital.

The musical entertainment, which was to have been held on Monday night, January 2, has been postponed until Monday night, January 9, and will be known as the "Home Folks' Musical." All men and women of the town are invited to be present, and children will not be admitted unless accompanied by their parents.

During the month of January, the pool and billiard prizes will be given to the men making the highest continuous run.

On December 28, Mr. McWilliams rolled 139 in duckpins, this being the highest duckpin score ever rolled on the Gorgona alleys.

The high score in tenpins for December was made by Mr. Haggerty-229.

GATUN.

For the benefit of the students of the Spanish classes and any other members of the clubhouse, who desire to learn the common phrases and words of the Spanish language, a "conversation" will be conducted free of charge every Thursday evening in the game room. Jack Kiernan will act as leader.

Mr. Dickson, leader of the glee club, wishes to extend an invitation to members of the clubhouse, who have vocal talent, to join the Gatun Glee Club, which meets every Thursday night.

Apples and cigars were the refreshments served at the "watch party," held by the members at the clubhouse, on New Year's Eve. The program was informal and included the following: Recitations by Mr. O'Brien, Mr. Halleck, and Mr. Masterson; songs by Mr. Ourand, Mr. Hull, and Mr. McHie; humorous stories by Mr. Donahue, Mr. Ludwig, and Mr. Royal; piano solo by Mr. Richardson. In the "Battle of the States and Countries," Messrs. Barte, Harrington, Brown, Royal, Halleck, Ourand, O'Brien, Richardson, Wittrig, and Soule participated. The program concluded with colored views from the miroscope.

A calendar bearing the picture of the Gatun clubhouse has been published by Mr. Healy, a member of the Y. M. C. A.

Resolutions on the death of W. H. H. Brady, an active member of the Gatun Y. M. C A., were signed by a large number of the members and forwarded to the family of the deceased.

A new supply of howling shoes and "gym" suits has been received from the States, and they are now on sale.

One hundred new books were added to the library on Christmas Day.

The clubhouse was decorated during the holiday season with Christmas trees, colored electric lights, and colored crepe paper.

Louis Durand won the gold medal for 3-cushioned billiard tournament. The progressive pool for January will start on the 5th; prize, a handsome cue. Mr. DePoorter of Gatun, and Mr. Hirsh of Empire, will play for the championship of the Isthmus, the game to be 300 balls, 150 to be played at Gatun on Saturday evening, January 7, and the remaining 150 at Empire on January 14. The series will be very interesting as Mr. Hirsh is about the only person in the Zone able to play Mr. DePoorter on even terms.

The membership committee reported 450 members on January 1. The committee is confident of having 500 by February 1.

CRISTOBAL.

In the December "Strawberry" tournament, C. M. Bullard won first, D. F. Rabbitt, second place. Each made a record of having won 38 out of the 48 games bowled. W. A. Blackburn won high average, and F. D. Rabbitt high score—250—for the month.

The 200, or over, scores show 79 made by local members, as follows: Thomas, 234; Schofield, 211; Rabbitt, thirteen 200-scores, highest, 250; Collins, four—high, 227; Bullard, fourteen—high, 227; D. Adams, 200; Herring, three—high, 210; Rigney, four—high, 223; Barrett, seven—high, 223; Rosteck, five,—high, 225; Veen 202; Blackburn, 208,213; T. Burns, 215; Wood, 213; Henry, 201; Russell, 206; Howard, 206; Sims, 216; Louch, seven—high, 220; Jacquez, 204, 206; Grover, 212, 208; Hess, 203; Wheeler, 210, 205; Gibson, 211; Furlong, 201. Wood won the prize for the greatest number of games bowled during the month.

Monday night, Gray's orchestra gave a musical entertainment at the clubhouse.

Rates for Coach Hire.

ORDINANCE

Providing for the fixing of rates of charges to be made for the transportation of passengers over the streets and roads of the Canal Zone.

Be it enacted, by the Isthmian Canal Commission, as follows:

Section 1. The Head of the Department of Civil Administration is hereby empowered and directed to fix rates of charges which may be made and collected by persons engaged in the transportation of passengers for hire over the streets and roads of the Canal Zone by means of any automobile, or other motor vehicle of similar construction or operation, or by means of any carriage, surrey, wagon, cart, or other conveyance drawn by horses or mules. He is also empowered and directed, at any time when circumstances may appear to warrant, to revise or change such rates as may have been theretofore fixed by him. Said rates shall be reasonable.

Section 2. Immediately upon fixing such rates of charges, or upon any revision or change thereof being made by him, the Head of the Department of Civil Administration shall promulgate said rates or charges, or any revision thereof, in the following manner, to wit:

(*a*) By publication thereof in two consecutive issues of THE CANAL RECORD;

(*b*) By publication thereof by printed posters posted conspicuously in each of the following places: At the various police stations of the Canal Zone; at the various passenger stations of the Panama railroad in the Canal Zone and in the Republic of Panama; at the post-office buildings in the Canal Zone, and at any other points as may seem to him proper, in order that due notice thereof to the public may be given.

Section 3. The Head of the Department of Civil Administration shall also cause to be printed a sufficient number of cards or pamphlets containing such rates of charges so fixed, or revised by him, as may be necessary to furnish a copy thereof to each person driving or operating any conveyance of the hereinbefore indicated character for the transportation of passengers for hire in the Canal Zone; and it is hereby made the duty of all such persons to secure from the Head of the Department of Civil Administration such copy, and to keep same at all times conspicuously posted or displayed in each such conveyance so used or operated; and a failure so to do will constitute a violation of this ordinance.

Section 4. When rates for such transportation shall have been fixed and promulgated, as by this ordinance directed, any person who shall charge and collect for the transportation of any person over the streets or roads of the Canal Zone in either of the hereinbefore indicated conveyances any sum in excess of such prescribed and promulgated rates, shall be held to have committed a violation of this ordinance; and any person who has received for himself or others such transportation in the Canal Zone, and who fails or refuses to pay therefor the rate thus prescribed and promulgated, shall, likewise, be held to have committed a violation of this ordinance. *Provided, however*, a rate different from that promulgated hereunder may be charged and paid if the parties to the transaction may agree thereon, but if there be any dispute as to such agreement the duly prescribed rate shall prevail.

Section 5. Any person, firm, or corporation who fails to comply with any requirement or provision of this ordinance, or who charges and receives any rate in excess of that prescribed by the Head of the Department of Civil Administration, or who refuses to pay any rate prescribed by the Head of the Department of Civil Administration agreeably to the provisions of this ordinance, shall be held to be guilty of a misdemeanor, and upon conviction, shall be fined for each offense a sum not exceeding twenty-five dollars ($25).

The rates to be charged under this ordinance will be published as soon as they are decided upon.

Married.

WARR-COLES—At Pleasantville, N. Y., on December 21, Gladys, daughter of Mr. and Mrs. Clinton Conklin Coles, to Walter Hopp Warr. Canal Zone residence, Empire.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending January 11, 1911. (75th meridian time):

DATE.	Low.	High.	Low.	High.
	A. M.	A. M.	P. M.	P. M.
January 5	12.40	6.32	12.55	7.00
January 6	1.22	7.15	1.38	7.45
January 7	2.10	8.00	2.25	8.32
January 8	3.00	8.53	3.18	9.25
January 9	3.58	9.53	4.17	10.25
January 10	5.00	11.00	5.20	11.30
		P. M.		
January 11	6.05	12.10	6.30	......

Proposals for Excavation, Gold Hill Line, Relocation, Panama Railroad.

Sealed proposals for railroad grading on the new line of the relocation, Panama railroad, situated on the east side of the Culebra Cut, opposite the towns of Empire and Las Cascadas, will be received until 1 p. m., January 16, at the office of the Chief Engineer, P. R. R., Colon, and then opened.

This excavation consists of two distinct sections, as follows:

The first section, between station 1461 and station 1535, consisting of approximately 90,000 cubic yards.

The second section extends from station 1580 to station 1700, and consists of approximately 110,000 cubic yards.

As time is an essential element, the contract for both of the above sections will not be awarded to any one man.

Bids should be submitted on a flat price per cubic yard of excavation, without classification, and should contemplate finishing the work by August 1, 1911.

Full information will be furnished upon application to the office of Chief Engineer, Panama railroad. The railroad company reserves the right to reject any and all bids.

Envelopes containing proposals should be endorsed "Proposals for Railroad Grading, Gold Hill Line, Relocation, Panama Railroad," and addressed to F. Mears, Chief Engineer, P. R. R., Cristobal, C. Z.

Proposals for Excavation, Obispo Diversion.

OFFICE OF CHIEF QUARTERMASTER,
CULEBRA, C. Z., December 23, 1910.

Sealed proposals for excavation of about 21,942 cubic yards of earth, located between stations 1602 and 1612, on the east bank of the Canal, will be received here until 2 p. m., January 10, 1911, and then opened. Full information will be furnished by the Division Engineer, Empire. Envelopes containing proposals must be endorsed "Proposals for Excavation, Obispo Diversion," and addressed to C. A. Devol, Chief Quartermaster.

Sale of Animals at Public Auction.

There will be sold at public auction by the district quartermaster at Ancon, C. Z., at the old corral, at 2 p. m., Saturday, January 21, 1911, to the highest bidder for cash, the following Isthmian Canal Commission property:

Fifteen (15) mules, American; one (1) pony, native.

The Government reserves the right to accept or reject any or all bids. For further information apply to district quartermaster, Ancon C. Z.

C. A. DEVOL, *Chief Quartermaster*.

OFFICIAL CIRCULARS.

Duties of Inspector of Shops.

CULEBRA, C. Z., December 13, 1910.

CIRCULAR No. 339-A. (Superseding CIRCULAR No. 339):

1. Effective this date, the duties of Maj. T. C. Dickson, Inspector of Shops, are as follows:

2. He will report directly to the Assistant to the Chief Engineer.

3. His jurisdiction covers all shops of both the Isthmian Canal Commission and the Panama Railroad Company.

4. As such he will exercise general supervision over, and inspect the economical distribution of work, employes, and tools among the various shops; the erection of new, and alterations of existing shops; the procurement and installation of new tools and appliances in shops; the adoption of standard shop methods and the use of economical processes in the prosecution of mechanical work; the observance of rules and circulars in shops; the amount of superintendence in each shop, and the competency thereof; and such other duties as may be assigned to him from time to time.

5. He will advise with division and resident engineers in charge of shops, and the General Superintendent of the Panama Railroad Company; and will give instructions to the superintendent of the Mechanical Division in regard to the duties with which he is charged.

6. He will give information to superintendents, master mechanics, and foremen in direct charge of shops in regard to approved shop methods, the use of economical processes, the observance of rules and circulars, proper shop discipline, methods of keeping cost of work, relative competency and amount of supervisory and clerical force, and on matters relating to shop management.

7. He will be furnished with all information and data he may require, which will be obtained in the most direct manner and from original sources of information.

8. In addition to the above duties, his services in an advisory capacity in connection with all mechanical matters are available for use by the division engineers and other officials whenever desired.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Duties of Traveling Engineer.

CULEBRA, C. Z., December 29, 1910.

CIRCULAR No. 266-F:

Effective January 1, 1911, the duties and jurisdiction of Traveling Engineer D. E. Irwin, as outlined in Circular No. 266-D, dated July 11, 1910, are extended to cover all marine equipment of the Isthmian Canal Commission and Panama Railroad Company, except vessels of the latter plying between Cristobal and New York.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Manufacture of Material at Gorgona Shops.

CULEBRA, C. Z., December 12, 1910.

CIRCULAR No. 197-G:

1. In submitting requests for the manufacture of material at the Gorgona shops on form 159 C. E., the following rules in regard to indicating thereon the time of delivery desired will be observed:

(*a*) When the material is required for future use the date on which it should be delivered will be stated on the request for each item.

(*b*) When material is urgently required the word "Rush" will be placed on the request. Such material will be worked on 16 hours per day (Sundays excepted) until completed.

(*c*) When an emergency exists that requires the completion of the material at the earliest possible date, the words ".......... hours overtime per day authorized" will be placed on the request, and if Sunday work is desired, the words "including Sundays" will be added. The overtime authorized per day will be in excess of the 16 hours worked by the day and night shifts.

2. If material cannot be finished by the desired date of delivery, even when worked on 16 hours per day, the superintendent of the Mechanical Division will promptly notify the head of the division or department concerned and request instructions as to whether or not overtime is required.

Upon receipt of each work request the superintendent of the Mechanical Division will determine whether or not the work covered by it can be completed by the date specified for its delivery without delaying the delivery of other work under previous requests. If the work cannot be finished within the time limit without delaying other work beyond the date fixed for its delivery, he will so inform the head of the division or department concerned and arrange for such extension in delivery on that, or on some other work for that division or department, as will enable specified dates of delivery to be met.

3. In case early delivery is required, one copy of form 159 C. E., with drawings, should be sent direct to Gorgona shops, and that fact noted on the remaining copies which will be sent to this office.

4. It is enjoined that future needs be anticipated as much as possible, and that the date of delivery be fixed as far in advance as the uninterrupted prosecution of construction work will permit.

5. While sufficient employes will be kept on the night shift under the Mechanical Division to reduce overtime work to a minimum, it should be borne in mind that night work is generally more expensive than that performed in day time; therefore, rush work should be requested only when necessary. For similar reasons, overtime, including Sunday, work should be required only in case of emergency, or when apparatus cannot be spared for repairs at hours other than during overtime hours and on Sundays.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Lubricants on Locomotives.

CULEBRA, C. Z., January 1, 1911.

CIRCULAR No. 290-A. (Superseding CIRCULAR No. 290):

Effective this date, the rules governing the issue and use of lubricants on locomotives are revised, as follows:

1. Each engine will be furnished with one two-gallon can marked for and containing one gallon of valve oil, and with one two-gallon can marked for and containing one gallon of engine oil. This oil will be considered emergency oil, and will be used only in case of necessity.

2. The regular allowance for engines is, as follows:

Valve oil—	Narrow gage engines	1 pint per day.
	All other engines	1½ pints per day.
Engine oil—	French, narrow gage, and small American engines	2 pints per day.
	Large American engines	3 pints per day.
Headlight oil		1 gallon per month.
Waste		½-pound per day.

Engineers will be expected to exercise economy in the use of oil, and if any saving can be made in the regular allowance, the oil remaining should be put into the emergency cans.

3. The foregoing allowance is based on a standard working day For engines in service a greater number of hours, the regular allowance may be increased in proportion.

4. Any headlight oil, in addition to the regular allowance, required on account of night work, may be issued on ticket signed by the engineer stating reason for which oil is required. Engines equipped with electric headlights will be issued the necessary amount of dynamo oil in one-gallon cans, and the engines will be equipped, in addition, with a one-pint oiler.

5. White lead, graphite, tallow, and soap may be issued in small quantities, when required, only on requisition approved by one of the traveling engineers.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Charges for Electricity.

CULEBRA, C. Z., December 30, 1910.

CIRCULAR No. 336-A. (Superseding CIRCULAR No. 336):

Effective January 1, 1911, and until further notice, charges for electric light and current furnished by the Mechanical Division to all departments and divisions will be as follows:

	Per Month.	Per Kilowatt Hour.
Each 16 c. p. lamp	$0.45	$......
Power and lights on meter basis, where the Mechanical Division does not furnish lamp renewals		.03
Lights on meter basis, where lamp renewals are furnished by the Mechanical Division		.04
Each 15 h. p. motor without meter	50.00	....
Each 10 h. p. motor without meter	30.00	....
Each 5 h. p. motor without meter	15.00	....
Each arc lamp (same as heretofore)	6.00	....

These rates do not apply to nor change the existing charges for current furnished for private consumption.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Auction Sale of Dairy Cows.

On Wednesday, January 18, at 10 a. m., there will be sold at public sale at the Ancon Hospital dairy, four dairy cows, ranging in age from seven to 10 years. The dairy is located near the insane asylum buildings in the rear of the hospital grounds. The terms of the sale will be cash.

CHAS. F. MASON, *Superintendent.*

Ancon, C. Z., December 28, 1910.

LOST—Thursday, December 29, either in railroad station at Panama, or on the train leaving at 1.30 p. m., a gold brooch set with a small chip diamond. Finder please return to the station agent at Pedro Miguel and receive reward

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL

Advance	P. R. R.	Thursday	Dec. 29
Panama	P. R. R.	Wednesday	Jan. 4
Allianca	P. R. R.	Tuesday	Jan. 10
Colon	P. R. R.	Monday	Jan. 16
Advance	P. R. R.	Saturday	Jan. 21
Panama	P. R. R.	Saturday	Jan. 28
Allianca	P. R. R.	Saturday	Feb. 4
Colon	P. R. R.	Friday	Feb. 10
Advance	P. R. R.	Thursday	Feb. 16
Panama	P. R. R.	Thursday	Feb. 23
Allianca	P. R. R.	Wednesday	Mar. 1

CRISTOBAL TO NEW YORK.

Advance	P. R. R.	Tuesday	Jan. 10
Panama	P. R. R.	Monday	Jan. 16
Allianca	P. R. R.	Monday	Jan. 23
Colon	P. R. R.	Sunday	Jan. 29
Advance	P. R. R.	Friday	Feb. 3
Panama	P. R. R.	Friday	Feb. 10
Allianca	P. R. R.	Thursday	Feb. 16
Colon	P. R. R.	Wednesday	Feb. 22
Advance	P. R. R.	Tuesday	Feb. 28
Panama	P. R. R.	Tuesday	Mar. 4

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 11th and 28th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Metapan	U. F. C.	Thursday	Dec. 29
Prinz Joachim	H.-A	Saturday	Dec. 31
Zacapa	U. F. C.	Thursday	Jan. 5
Oruba	R. M	Saturday	Jan. 7
Sibiria	H.-A	Saturday	Jan. 7
Almirante	U. F. C.	Thursday	Jan. 12
Prinz Aug. Wilhelm	H.-A	Saturday	Jan. 14
Santa Marta	U. F. C.	Thursday	Jan. 19
Magdalena	R. M	Saturday	Jan. 21
Metapan	U. F. C.	Thursday	Jan. 26
Prizn Joachim	H.-A	Saturday	Jan. 28
Zacapa	U. F. C.	Thursday	Feb. 2

COLON TO NEW YORK.

Santa Marta	U. F. C.	Thursday	Jan. 5
Magdalena	R. M	Monday	Jan. 9
Sarnia	H.-A	Tuesday	Jan. 10
Metapan	U. F. C.	Thursday	Jan. 12
Prinz Joachim	H.-A	Tuesday	Jan. 17
Zacapa	U. F C.	Thursday	Jan. 19
Clyde	R. M	Monday	Jan. 23
Sibiria	H.-A	Tuesday	Jan. 24
Almirante	U. F. C.	Thursday	Jan. 26
Prinz Aug. Wilhelm	H.-A	Tuesday	Jan. 31
Santa Marta	U. F. C.	Thursday	Feb. 2

NEW ORLEANS TO COLON.

Abangarez	U. F. C.	Saturday	Dec. 31
Heredia	U. F. C.	Wednesday	Jan. 4
Atenas	U. F. C.	Saturday	Jan. 7
Cartago	U. F. C.	Wednesday	Jan. 11
Turrialba	U. F. C.	Saturday	Jan. 14
Parismina	U. F. C.	Wednesday	Jan. 18
Abangarez	U. F. C.	Saturday	Jan. 21

COLON TO NEW ORLEANS.

Turrialba	U. F. C.	Thursday	Jan. 5
Parismina	U. F. C.	Thursday	Jan. 5
Abangarez	U. F. C.	Thursday	Jan. 12
Heredia	U. F. C.	Thursday	Jan. 12
Atenas	U. F. C.	Thursday	Jan. 19
Cartago	U. F. C.	Thursday	Jan. 19
Turrialba	U. F. C.	Thursday	Jan. 26
Parismina	U. F. C.	Thursday	Jan. 26

COLON TO BARBADOS, CALLING AT TRINIDAD.

Oruba	R. M.	Tuesday	Jan. 17

The next sailing of the Leyland Line will be as follows: *Cuban*, on or about January 16, for New Orleans via Kingston, Ja.

Hamburg-American steamers leave for New York every Tuesday at 10 a. m.; for Jamaica every fortnight, connecting there with steamers for all points in Cuba; for Port Limon every Tuesday, direct, or by way of Bocas del Toro.

Royal Mail steamers leave for New York on alternate Mondays at 5 p. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursday at 3 p. m.; for New Orleans via Port Limon and Puerto Barrios on Thursday at 6 p. m., and for New York on Thursday at 11 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3rd and 20th of each month.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, JANUARY 11, 1911. No. 20.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Work on the Lock Gates.

The first shipment of materials for work on the lock gates arrived on the Isthmus last week on the *St. Andrews* from Baltimore, consisting of 400 tons of equipment for handling the steel that will form the gates. This equipment includes two truss bridges, 134 feet 6 inches in length and 11 feet wide, which will be constructed over the lock chambers. On these bridges will be a railroad track, on which locomotive cranes will operate in handling the steel for the gates from the material yard alongside the locks. The bridges will be so constructed that when one set of gates is finished they can be moved from their location over one set of gates to the location of other gates. One 50-ton locomotive crane, and another crane of less capacity, have been erected by the contractors at Gatun, and the preparation of other handling equipment is in progress. The first shipment of steel for the gates is expected to leave the McClintic-Marshall shops near Pittsburg by the 15th of this month, and to arrive on the Isthmus early in February.

Excavation in Approach to Gatun Locks.

Excavation in the approach to the lower lock at Gatun was begun on January 3, when the suction dredge *Sandpiper* passed down the east diversion from the material basin at Gatun, and began work on the 700,000 cubic yards of earth that must be taken from the site of the approach channel. The excavation under the approach wall, which is a continuation of the center wall of the locks, must go down to 50 feet below sea level, and that in the approach channel, to 41 feet below sea level. In order that the dredge may be able to work to this depth, a dike will be built across the entrance from the east diversion channel into the basin, which will be excavated on the site of the approach channel, and the water in this pit will gradually be lowered until the dredge has excavated to the required depth. Explorations by drill show that there is only a small quantity of rock in this section, and that most of the material can be removed by suction dredge. Excavation on the site of the lower, or north locks, at Gatun will be continued by steam shovel, while the suction dredge is working in the approach channel, and the two pits will be separated by a bulkhead constructed for that purpose.

December Excavation in Central Division.

The excavation in the Canal prism for the month of December, in the Central Division, was 1,408,881 cubic yards, making the total output for the calendar year of 1910, 18,552,961 cubic yards, the largest output in any calendar year in this division since the commencement of work by the United States.

The amount of material excavated during the first six months of the calendar year, January 1 to June 30, inclusive, which period included the entire dry season, was 9,574,956 cubic yards. For the period from July 1 to December 31, inclusive, which embraced the rainiest months of the wet season, the output was 8,978,005 cubic yards. For the calendar year ending December 31, 1909, when the next largest output was secured, the amount of material excavated during the first half of the year was 10,052,305 cubic yards, and during the last half, 8,257,221 cubic yards, the total for the year being 18,309,526 cubic yards. It will thus be seen that, as compared with the preceding calendar year, the greatest relative gain in the output in 1910 was made from July 1 to December 31, inclusive.

Dredging in Mindi Excavation Pit.

The suction dredge *Sandpiper* finished work in the Canal basin at Mindi on December 31. This work was originally a steam shovel job, and the lowest shovel had reached a depth of 41 feet below sea level when the pit was flooded during the heavy rains and floods of November, 1909.

Much of the rock was originally overlaid with earth and mud that interfered considerably with the operation of the steam shovels in handling the rock. Prior to the flood, it had been the intention to leave the removal of those portions of the rock, which were covered with the largest amount of earth, to be done by dipper dredges, after the steam shovels were withdrawn. When the pit was flooded, advantage was taken of the opportunity to remove most of the overlying earth with pipe line dredges. Suction dredges have been sent into the flooded pit, and 401,511 yards of earth have been removed. Of this amount, dredge *No. 86* removed 181,847 cubic yards from October 24 up to and including November 13, and the dredge *Sandpiper*, 219,664 cubic yards from November 14 to December 31. There remain now about 510,000 cubic yards of rock to be excavated by steam shovels. An isolated body of rock, containing 41,000 cubic yards, with 200,000 cubic yards of intervening and overlying earth, has been left to be removed by dredges, after the steam shovel work is completed.

A gap from the French canal to the pit will be closed by an earth and rock dike, with sheet pile core, after which pumps will be set at work to unwater the balance. It is expected that steam shovels will be again operated by the first of February.

Records by Porto Bello Crusher.

The rock crusher at Porto Bello accomplished more work in December than in any previous month, the output for the month being 80,244 cubic yards. The plant worked 12 hours a day, and the great increase is due to the installation of the new No. 21 crusher. One result of this increased output is, that the rock storage pile at Gatun Locks contains 50,000 cubic yards of crushed rock, the greatest amount yet accumulated for this work, representing a three weeks' supply.

On January 4, the crusher at Porto Bello established a new daily record, when 4,255 cubic yards of rock were crushed in 12 hours. This record is higher than that of any previous 12 hour or 16 hour day before the large crusher was installed, and is only about 1,200 cubic yards less than the highest previous daily record of 5,435 cubic yards in a day of 24 hours.

The sand storage pile at Gatun on December 31 contained 50,000 cubic yards of Nombre de Dios sand.

A statement of the work done at the Porto Bello crusher, by days, for the week ending January 7, 1911, follows:

DATE.	Hours worked.	Cubic Yards.
January 2—Holiday		
January 3	10:41	3,910
January 4	9:21	4,255
January 5	8:49	4,039
January 6	9:49	4,113
January 7	8:41	3,209
Total	47:21	19,526

Canal Zone Highway at Miraflores.

The section of the Canal Zone highway between Miraflores and the Cardenas River, over the Miraflores dumps, has been laid off, and roadbuilding from the Miraflores end was begun a few days ago. With the closing of this gap, and the completion of the unfinished section of road between Pedro Miguel and Miraflores, there will be a continuous highway between Panama and Gorgona, a distance, measured by this route, of about 20 miles. It is expected that these sections will be ready for traffic by the end of the dry season.

The road south from the Miraflores ridge crosses a flat to the beginning of the dumps and the subgrade through this section was completed two week ago. It continues to the top on a six per cent grade, and from that point to the Cardenas River will cross but one dump track, and the location of this track will not change. For nearly a mile over the top of the dumps, the surface is practically

NOTES OF PROGRESS.

(*Continued.*)

level, and there will be only the ordinary grading to do. Near the south end, there is a high ridge of spoil, which will be cut through and the material utilized in making a fill between the edge of the dumps and the Cardenas River bridge. This bridge will be 35 feet long, out to out, with a floor of reinforced concrete, resting upon two concrete abutments, one on either side of the river bed, with their foundations on rock. The floor of the bridge will be about five feet above the present water level, the extending of a part of the dumps across the old bed of the river at a point below, having forced back the water and caused the formation of a small lake. South of the Cardenas River, the road is completed into Corozal, and will be used for the transportation by wagon of the materials required in the construction of the bridge. Convict labor is employed in this roadbuilding.

The trestles spanning the valleys of the Caimitillo and Camaron rivers, north of Miraflores, over which the Canal road to Pedro Miguel will extend, were completed some time ago, and the dumping of material for the fills is in progress. At the north end of the embankment, the road gradually swings back and joins the relocated line of the Panama railroad near the Pedro Miguel River. For half a mile north of the river, the roadbed parallels the railroad embankment on a berm graded out of it. Before the Pedro Miguel depot is reached, the road again diverges from the berm to the ground level, which is above elevation plus 60 in this vicinity and, therefore, a permanent location so far as the future Miraflores lake level is concerned.

Ancon Crusher.

A report of the rock crushed at Ancon quarry during the weeks ending December 24 and 31, follows:

DATE.	Hours worked.	Cubic Yards.
December 19	8:30	2,771
December 20	11:30	3,825
December 21	9:30	2,893
December 22	10:25	3,320
December 23	9:10	2,651
December 24	7:35	2,073
Total	56:40	17,533

DATE.	Hours worked.	Cubic Yards.
December 26—Holiday		
December 27	10:10	3,480
December 28	9:25	2,516
December 29	8:45	2.927
December 30	9:35	3,060
December 31	7:30	2,184
Total	45:25	14,167

Steam Shovel and Dredge Men.

Local No. 19, I. B. of S. S. and D. M., will hold its monthly meeting on Sunday, January 15, at 12.15 p. m., at the I. C. C. lodge hall, Empire. Important business will be transacted at this meeting. All brotherhood men should use every effort to attend.

WALTER P. TUDOR,
Secretary and Treasurer.
Empire, C. Z., January 7, 1911.

Ladder Dredge Records.

The record of 176,082 cubic yards excavated by Atlantic Division ladder dredge *No. 5*, in July, 1909, was based on 26 working days of 20½ hours per day, a total of 533 working hours, equivalent to an average excavation per hour of over 330 cubic yards. The record of 219,795 cubic yards made by the Pacific Division ladder dredge *Marmot*, in December, 1910, was based on 30 actual working days of 24 hours each, a total of 720 working hours, equivalent to an average excavation per hour of over 305 cubic yards. The best average hourly output for any one month is, therefore, still held by dredge *No. 5*.

Visit of Japanese Training Ships.

The *Asama* and *Kasagi*, two cruisers of the Japanese Imperial Navy, used as training ships for midshipmen, arrived at Panama on January 6, in command of Rear Admiral Yashiro. On January 9 and 10, the officers were taken over the Canal work by the Chief Engineer.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Nearly 50 per cent of the concrete for the system of three twin locks at Gatun has been laid, the exact amount in place at the close of work on January 7 being 1,017,191½ cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending January 7, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
January 2 (Holiday)								
January 3	2,218	37:13	6	420	9:40	2	245¾	2,883¾
January 4	2,506	40:17	6	424	9:40	2	231	3,161
January 5	2,228	42:47	6	476	9:40	2	277½	2,981½
January 6	1,842	31:37	6	464	7:25	2	177	2,483
January 7	2,200	48:30	8	460	7:10	1	323	*2,983
Total	10,994	200:24	......	2,244	43:35		1,254¼	14,492¼
Previously reported	....	....	......	....	....	......	....	1,002,699¼
Grand total	....	....	......	....	....	......	....	1,017,191½

*Of this amount 25 cubic yards were mixed by a portable ½-yard mixer.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is 58 per cent completed, 487,763 cubic yards, out of a total of 837,400, having been placed at the close of work on Saturday, January 7. The record of concrete laid during each of the five 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
January 2—Holiday								
January 3	1,232	16:50	3	572	18:00	3	....	1,804
January 4	1,176	16:50	3	452	10:00	2	....	1,628
January 5	1,250	17:00	2	344	7:50	1	....	1,594
January 6	1,476	9:00	3	146	5:00	1	8	1,630
January 7	1,392	15:25	3	422	18:00	3	3	1,817
Total	6,526	74:25	2.8	1,936	58:50	2	11	8,473
Previously reported	....	....	......	....	....	......	4,039	479,290
Grand total	....	....	......	....	....	......	4,050	487,763

MIRAFLORES LOCKS.

The record of concrete placed in the upper lock at Miraflores, during the five 8-hour working days of the week ending January 7, follows:

DATE.	AUXILIARY PLANT.										Total.
	2-cubic yard mixers.			½-cubic yard mixers.			¼-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*						*Cu. Yds.*	*Cu. Yds.*
Jan. 2	Holiday										
Jan. 3	204	3:50	2	142	7:50	2	118	7:00	1	30	494
Jan. 4	560	10:00	2	195	12:00	3	78	5:00	1	35	868
Jan. 5	534	9:33	2	300	17:25	3	151	8:45	1	20	1,005
Jan. 6	382	11:83	2	178	14:50	3	83	7:00	1	5	*662
Jan. 7	422	8:67	2	319	21.50	4	....	....	......	....	†754
Total	2,102	43:33	2	1,134	72:75	3	430	27:45	.80	90	3,783
Previously reported	....	....	......	....	....	......	....	....	......	2,371	96,886
Grand total	....	....	......	....	....	......	....	....	......	2,461	100,669

* Includes 14 cubic yards by hand.
† Includes 13 cubic yards by hand.

COLON BREAKWATER.

Trestle Advanced Nearly One-Half Mile—Post-office Facilities—Electric Plant.

At the close of work on December 31, the double trestle for the Toro Point breakwater had been advanced to a point 2,430 feet from the shore, 352 feet having been driven during the month. Two bents of the trestle were carried away during the "norther" of December 2 and 3, and in a high sea a few days afterward, five more bents gave way. On the last occasion, the pile drivers were set at work opposite a reef over which the water broke with considerable force expending itself upon a bent which had been partly driven. This was finally carried away, and the strain exerted by the stringers upon the other four bents also caused them to go down.

A total of 49,922 cubic yards of material, place measurement, was dumped on the breakwater in December. In addition, 19 acres of ground were cleared for prospective quarry operations, and 4,190 feet of new track were laid, 2,400 feet, consisting of doubling track from the storehouse to hill No. 1, and the remainder, of quarry track.

Work on the installation of the water system, and on the reservoir, continues. A total of 3,415 feet of pipe was laid in December, as follows: 600 feet of 6-inch; 2,500 feet of 4-inch, and 315 feet of 3-inch pipe. The 4-inch pipe line was completed. Operations at the reservoir site consisted in continuing the construction of the three dams required to impound the water, and of the building of the diversion dam at Nombre Falls, near the head of the supply. A total of 6,708 cubic yards of material was placed in the reservoir dams, and 597 cubic yards of clay and rock in the diversion dam, in December.

The new post-office is about completed. It will be run as a branch of the Cristobal office, and there will be two dispatches of mail each way daily. The mail from Cristobal will leave at about 6.30 a. m., and 4.30 p. m., respectively, and the mails at Toro Point will close each time before the boat returns. A money order clerk will visit Toro Point immediately after pay days, to issue money orders to those who desire them, following out the same plan as at Porto Bello.

The installation of an electric light plant was begun this week. The current will be supplied by a 50-kilowatt generator, capacity 800 to 900 lights of 16 c. p., formerly in service at Gatun. Two old boilers, one taken from the machine shop at Tabernilla, and the other from Gatun, where it was used in the operation of a centrifugal pump, will be set up to furnish steam power.

Sanitary conditions continue to improve. A total of 6,939 linear feet of new ditches was dug; 25,500 square yards of pools were oiled, and 2,800 water receptacles were destroyed during December. The engineering and sanitary operations in and around the settlement have involved the removal, under the lease, to January 1, 1911, of 516 fertile, and 465 barren coconut trees.

Information for Panama Railroad Travelers.

Pocket time table No. 8, shortly to be issued by the Panama Railroad Company, will contain, in addition to other information, the following:

Effective February 1, 1911, trains Nos. 2, 5, 6, and 7 will carry an observation parlor car on the rear. Seats may be reserved on application to ticket agents at Panama and Colon, or to the porter in charge of the car.

Guides, for tourist parties desiring to inspect Canal operations on the Isthmus, will be furnished on application to ticket agents at Colon or Panama, at the rate of $7.50, U. S. currency, a day.

Gongs will be sounded at Colon and Panama, indicating starting time of trains, as follows: Five taps, five minutes before the train starts; one tap, one minute, and two taps for starting. Parties desiring to pass through the station gates, with friends leaving on trains, may secure permits upon application to ticket agents.

Packages left on trains, if found by company employes, can be procured upon application to agents. The company, however, assumes no responsibility for such packages.

I. O. O. F. Elections.

At the semiannual election of officers in the several I. O. O. F. lodges on the Isthmus, the following was the result:

Isthmian Canal Lodge, No. 1, of Gorgona—Noble grand. S. J. Boyd; vice-grand, H. L. Greely; secretary, S. E. Goree; treasurer, C. E. Whipple, past grand.

Cristobal Lodge, No. 2, of Cristobal—Noble grand, J. L. Greene; vice-grand, Harry A. Collins; secretary, J. P. Mead, past grand; treasurer, Arthur Cotton.

Canal Zone Lodge, No. 3, of Culebra—Noble grand, Henry N. Rice; vice-grand, Chas. C. Cameron; secretary, Edwin W. Palmer; treasurer, Claude Peters.

Pacific Lodge, No. 4, of Ancon—Noble grand, George C. Ferris; vice-grand, James S. George; secretary, Olin E. Granberry; treasurer, E. M. Keyser.

Gatun Lodge, No. 5, of Gatun—Noble grand, J. Frank Houston; vice-grand, John J. Walsh; secretary, H. N. Tweed; treasurer, Peter Filter.

Isthmian Canal Rebekah Lodge, No. 1, of Gorgona—Noble grand, Mrs. Louisa McLotz; vice-grand, Mrs. Miriam Beetham; recording secretary, Mr. L. N. Cole, past grand; financial secretary, Mrs. Gearste; treasurer, Mr. S. J. Boyd.

District Deputy Grand Sire B. F. Sisson, and suite, will install the newly elected officers, as follows: Canal Zone Lodge, No. 3, Monday evening, January 23; Pacific Lodge, No. 4, Thursday evening, January 19. Gatun Lodge, No. 5, will hold a public installation of officers on Friday evening, January 20, at 8 o'clock. Refreshments will be served and everybody is cordially invited to attend. The officers of Cristobal Lodge, No. 2, were installed on Monday evening, January 9, and those of Isthmian Canal Lodge, No. 1, on Tuesday evening, January 10. Isthmian Canal Rebekah Lodge, No. 1, of Gorgona, will hold a public installation of its officers on Friday evening, January 13. Arrangements are being made for a special train from Colon, and from Panama, for this occasion.

Guilty of Stealing Commissary Stores.

After trial before Justice Owen in the Circuit Court at Ancon on January 4 and 5, F. P. Petersen and Charles Silvers, proprietors of the Hotel Metropole in the city of Panama, were found guilty of abetting and encouraging Henry J. Hines, a Canal employe, in the embezzlement of commissary stores. Hines was found guilty on December 24, and sentenced to five years in the Canal Zone penitentiary. It was shown that the goods embezzled were delivered by Hines, who was in charge of commissary supplies for the floating equipment at Balboa, to the Hotel Metropole wagon, by which they were carried from Balboa to the hotel in Panama. The evidence showed that the embezzlement had been committed about once a week for a period of nine months. On Monday, January 9, Petersen and Silvers were sentenced to two and one-half years each in the Culebra penitentiary at hard labor. An appeal was taken, and the bail was raised from $5,000, to $6,000 each.

Canal Zone Postmaster Absconds.

Bernard L. Kearney, postmaster at San Pablo, absconded on December 29, and an investigation of his accounts showed that he was short approximately $1,750. He was arrested in New Orleans on January 2, and is returning to the Isthmus under custody, on the *Atenas*, due to arrive in Colon on January 12. After his arrival, a formal charge will be made against him, and he will be tried for the offense. The Government is amply protected by his bond.

Notice to Employes.

Employes of the Commission and Panama Railroad Company on the Isthmus are instructed not to advise friends in the States to come to Panama in the hope of procuring employment on the Canal, or railroad forces. Persons wishing employment on the Isthmus should make application to the Washington office, and take their turn on the registers. No one can be sure of employment unless he is sent here by the Washington office, and preference is given to applicants through the employment agencies in the States.

Stages of the Chagres.

Maximum heights of the Chagres River for the weeks ending midnight, Saturday, December 31, 1910, and January 7, 1911. All heights are in feet above mean sea level.

Day and Date	Station.				
	Vigia.	Alhajuala	Gamboa.	Bohio.	Gatun Lake.
Sun. Dec. 25...	130.4	96.0	49.2	19.8	19.5
Mon. Dec. 26..	128.8	95.1	49.1	19.5	18.9
Tues. Dec. 27..	128.0	94.2	47.7	18.8	18.5
Wed. Dec. 28..	127.7	94.0	47.6	18.2	18.0
Thurs. Dec. 29.	127.4	93.9	47.6	17.7	17.4
Fri. Dec. 30....	127.4	93.9	47.5	17.3	17.0
Sat. Dec. 31....	127.3	93.7	47.5	16.8	16.6
Height of low water.......	125.0	92.0	46.0		
Sun. Jan. 1....	127.2	93.6	47.5	16.4	16.2
Mon. Jan. 2....	127.0	93.5	47.5	16.1	15.9
Tues. Jan. 3....	127.0	93.4	47.5	15.8	15.6
Wed. Jan. 4....	126.9	93.4	46.5	15.5	15.4
Thurs.Jan.5....	126.8	93.5	46.4	15.3	15.1
Fri. Jan.6......	126.8	93.3	46.3	15.1	15.0
Sat. Jan. 7.....	126.7	93.2	46.2	14.9	14.8
Height of low water.......	125.0	92.0	46.0		

Sale of Animals at Public Auction.

There will be sold at public auction by the district quartermaster at Ancon, C. Z., at the old corral, at 2 p. m., Saturday, January 21, 1911, to the highest bidder for cash, the following Isthmian Canal Commission property:

Fifteen (15) mules, American; one (1) pony, native.

The Government reserves the right to accept or reject any or all bids. For further information apply to district quartermaster, Ancon C. Z.

C. A. Devol *Chief Quartermaster.*

LOST—Sunday, January 1, at Toro Point, or at the hotel at Cristobal, ladies' silver mesh pocket-book, with name "Ethel C. Michaels" engraved on the inner edge. Finder please notify Mrs. L. Dean Thorpe, P. O. box 206, Empire, C. Z.,

SOCIAL LIFE OF THE ZONE.

Women's Clubs.

At the meeting of the Cristobal Woman's Club on Wednesday, January 4, an address was made by Major Eugene T. Wilson on food and food supplies. The attendance was the largest of the season. Miss Eloise Brewer has been elected recording secretary, vice Mrs. I. P. Eppelsheimer, resigned.

The Gatun club held an election of officers on Friday, January 6, the following being chosen: President, Mrs. V. V. Sessions; vice-president, Mrs. Charles H. Stoddard; secretary, Mrs. E. L. Waid; treasurer, Mrs. W. H. Hanna. In the effort to raise money for a playground for the children of Gatun, the club will hold an entertainment within the present month. Bookcases are to be placed in the chapel, and the library will be open for the distribution of books on certain days of the week, when one of the club members will be in charge. There are over 100 juvenile books in the library, and an exchange has been made with the juvenile library of the Cristobal Woman's Club.

At the semiannual election of officers on January 4, the Paraiso Woman's Club added a vice-president and treasurer to the number of officers, Mrs. W. H. Ellenwood being chosen for the former, and Mrs. H. Bain for the latter office. The membership of the club has increased and the organization is on a sound basis. The meetings will be held hereafter on the second and fourth Wednesdays in the month, instead of the first and third Wednesdays, as hitherto. The next meeting will be held on January 25, with Mrs. H. M. Coutermarsh and Mrs. Hopp, as hostesses. It is proposed to devote the remainder of the year to the development of club programs, and to the establishment of a playground in Paraiso.

At the meeting of the Gorgona Woman's Club on Thursday, January 5, a paper on conservation of natural resources in the United States was read. The meeting was held at the home of the president.

There will be a meeting of the Empire Woman's Club at the clubhouse on Thursday, January 12.

A social meeting of the Pedro Miguel Woman's Club was held on Wednesday, January 4, with a good attendance.

Church Notes.

The Rt. Rev. Albion W. Knight, Bishop of Cuba, arrived on the Isthmus on the steamer *Metapan* on Thursday, January 5, and will remain until January 23. On Sunday, January 8, he preached at Trinity Church, Culebra, at 11 a. m.; at St. Mark's, (colored), Culebra, at 3 p. m.; and at St. Mary's, Empire, at 7.30 p. m. On January 11, he confirmed a class at St. Augustine's, Paraiso. Following is the itinerary for the remainder of his visit: January 15, St. James', Empire, 11 a. m.; Ascension, Bas Obispo, 2.30 p. m.; St. Paul's, Panama, 7 p. m.; January 16, Nativity, Tabernilla, 7.30 p. m.; January 18, St. Andrews, Gorgona, 7.30 p. m.; January 19, St. Philip's, Las Cascadas, 7.30 p. m.; January 22, St. Luke's, Ancon, 10 a. m.; St. Steven's, Gatun, 3.15 p. m.; Christ Church, Colon, 7.15 p. m.

The intervening days will be devoted to the administration of affairs pertaining to the Panama mission. During the first week of his stay, Bishop Knight will make his headquarters at Culebra, as the guest of Colonel Goethals; the second week, he will be at Empire with Mr. W. W. Warwick, and the third week, he is expected to be in Ancon, as the guest of Major Henry A. Brown, Chaplain, Engineer Corps, U. S. A. Any one wishing to call upon him is invited to do so at the above named places. On Friday evening, January 6, the Woman's Altar Guild of Christ Church, Colon, held a reception in honor of the bishop at the residence of Mrs. Frederick Mears.

The Woman's Altar Guild of St Mary's Church, Empire, held a social meeting on Thursday afternoon, December 29, at the home of the president, Mrs. A. S. Zinn, when Archdeacon Bryan was the guest of honor. There were 16 present. The new organ for the church has been purchased by the money raised at the recent sale held in the Commission clubhouse.

The Rev. Aquila Lucas, secretary of the International Sunday School Association for the West Indies and South America, spent the last week in December on the Isthmus visiting the various Sunday schools and conferring with the church and Sunday school workers in the Canal Zone. On Christmas Day, he visited the Wesleyan Methodist churches in Colon, Empire, and Panama. On Monday, December 26, he preached at the Baptist Church, Culebra; on Tuesday, December 27, a conference of Sunday school workers was held in Cristobal; on Wednesday evening, he preached at the Commission chapel at Gorgona; on Thursday, he was in Pedro Miguel, and on Friday evening, December 30, he addressed the Christian League at Gatun. New Year's Day was spent in visiting the missions in Gorgona and Matachin, and in the evening, he preached at the Commission chapel in Culebra. He sailed for Kingston on Tuesday, January 3.

The annual convention of the Isthmian Sunday School Association was held at Gorgona on Sunday, January 8. There was an election of officers. An address was made by Mr. H. L. Stuntz, which was followed by a round table discussion. A meeting of the Isthmian Ministers Association was held in the Commission chapel, Gatun, on Monday evening, January 9.

On Wednesday evening, December 21, the Gatun Christian League held a reception in honor of the Rev. Charles O. Purdy. Mr. Edgar Clarke Soule, president of the league presided, and made the address of welcome to the new pastor. Mrs. A. O. Ludwig sang, and addresses were made by the Rev. Carl H. Elliott, who welcomed Mr. Purdy in the name of the chaplains of the Canal Zone; by E. G. Putnam, acting superintendent of Canal Zone clubhouses, who expressed the welcome of the 2,000 members of the Young Men's Christian Association, and by Judge Thomas E. Brown, Jr. Mr. Purdy responded in a short speech. The program was followed by an informal reception, when the pastor was introduced to all present. Refreshments were served. There were about 100 present. The services in the Gatun chapel will be as usual—Sunday morning at 10.30, and evening at 7.45. The Sunday school will meet at 9.30 a.m. Since the arrival of Mr. Purdy on the Isthmus interest in the league and church has increased; the membership has tripled, and the attendance at the services is large.

Christmas at Culebra Penitentiary.

The committee of ladies, who organized the Christmas treat for the inmates of the Culebra penitentiary, were able to send a large number of home made cakes which were donated in response to their solicitation. The sum of $71 was also subscribed, and a portion of this was used for the purchase of fruit, nuts, ice cream, candy, and tobacco. The remainder of the fund will be expended for French and Spanish books for the prison library. The penitentiary chaplain desires to thank all who contributed for this cause, and to state that the gifts were greatly appreciated by the men.

K. of P. Dance.

Paradise Lodge, No. 6, Knights of Pythias, Paraiso, C. Z., will have a public installation of officers, folowed by a dance, on Saturday evening, January 14. All Knights are welcome, and invitations will be issued to the public. Special trains will be run from Las Cascadas and Panama.

I. O. P. K. Meetings.

At Paraiso Court, No. 5, I. O. P. K., Saturday night, January 7, the following officers were installed to serve for the first term of 1911: Honorable judge, W. M. Williams; prosecuting attorney, R. B. Swartevant; defendant attorney, Wm. Claus; chaplain, W. B. Jordan; comptroller and clerk, H. L. Bridges; sheriff, R. B. Leftwich.

The Supreme Court, I. O. P. K., will hold its next regular meeting at the I. C. C. hotel, Las Cascadas, Sunday, January 15, 1911, and all members of Las Cascadas Court, No. 4, are requested to be present, as important business pertaining to that court will be taken up.

I. A. of M. "Smoker."

A "smoker" was given by the members of Empire Lodge, No. 684, I. A. of M., at Empire, on Friday evening, January 6. There was a short entertainment, consisting of a vocal selection, sketches, a reading, and piano selections, after which refreshments were served and speeches given by several of the members.

Eastern Star.

The charter list of the auxiliary order of the Eastern Star is still open, 28 names having been enrolled. The list is circulated in Cristobal, Las Cascadas, and Gorgona. The charter will be closed on January 18.

Missing Men.

Any one having information regarding the whereabouts of relatives of the late Andrew R. Murphy is requested to communicate with T. V. Casanova, Empire.

Any one having information regarding the whereabouts of Thomas Bale, a mechanical engineer, who is supposed to have come to Panama from Staten Island, N. Y., is requested to communicate with Messrs. Dulon and Roe, attorneys, 41 Park Row, New York City.

Any one having information regarding the whereabouts of James Ewart Harley, who is supposed to have come to the Isthmus about two years ago, is requested to communicate with THE CANAL RECORD.

Sale of Horse at Public Auction.

There will be sold at public auction by the Administrator of Estates at the corral in Culebra, C. Z., at 1 p. m., on Monday, January 23, 1911, to the highest bidder for cash, the following property belonging to the estate of the late Willis S. Holstead:

One (1) horse, age 2½ years, 14 hands high, weight about 900 pounds, with white star in forehead.

The Administrator of Estates reserves the right to reject any or all bids. For further information apply to Administrator of Estates, Ancon, C. Z.

TOM M. COOKE, *Administrator of Estates.*

STREET RAILWAY.

Construction Resumed in Panama—License for Canal Zone.

Work has been resumed on the street railway in the city of Panama, which will connect with a similar railway in the Canal Zone, the legal obstacles to the continuance of the construction having been removed. The main line will extend through Central avenue in Panama to and around Cathedral Park in one direction, and along the Sabanas road in another direction, thus passing the railroad station. The Sabanas road line will follow the highway, at the side of the roadway, to the Canal Zone line, and then will enter upon a private right-of-way and parallel the highway to a point near the police station. Three spur branches will extend from this trunk line. The first will run from the Panama railroad station up the Tivoli road to the Hotel Tivoli, skirting DeLessep's Park and from this, a spur will extend past the fire station in Ancon to the laundry, which is at one of the entrances to the hospital reservation. The second branch will run from Central avenue down East 16th and East 15th streets to the old coal wharf of the Panama railroad, where the power house and car barns will be situated. At Northern avenue, a spur will run from this branch parallel with the water front to the public market. The third branch will run from Central avenue at Santa Ana Plaza down C street to West 16th street, thence south one block to the Balboa road, thence to Balboa docks. In the city of Panama the tracks will run on the streets, but in the Canal Zone, although permitted to follow the highway, they may not encroach on the roadbed.

On October 29, 1906, Henry T. Cook obtained from the municipality of Panama a 50-year franchise to operate an electric street railway, and to tear up and occupy the streets of the city for that purpose. He then made application to the Isthmian Canal Commission for a franchise to construct and operate an electric railway on the Balboa and Sabanas roads. The Commission recommended granting a revocable license under practically the terms of that which has been granted. The work in Panama city involved the tearing up of pavements laid by the United States Government, for which full payment had not been made, and as no guarantee had been offered that the pavements would be replaced, the work was stopped by the Government of Panama at the request of the United States. The franchise from the city was contested in the courts of Panama, and a decision was rendered favorable to the grantee. The franchise was then extended on condition that work should be resumed on the project by December 9, and a license for the railway in the Canal Zone were granted. A corporation, known as the Panama Public Utilities Corporation, was organized under the laws of Connecticut on July 18, 1910, with a capital of $500,000, and bonds will be issued to the amount of $300,000 for the purpose of obtaining money to construct the railway. The rights of Mr. Cook will be assigned to this corporation.

The license, under which the railway will operate in the Canal Zone, was granted to Mr. Cook by the President of the United States, under date of December 16, 1910. It provides for the construction, maintenance, and operation of a tramway system for the transportation of passengers for profit between the city of Panama in Panama, and Balboa, the Sabanas, the Hotel Tivoli, and Ancon Hospital grounds in the Canal Zone, along routes to be approved by the Chairman and Chief Engineer of the Isthmian Canal Commission.

Under this license, the location of tracks, poles, wires, and crossings shall be determined by the Chairman and Chief Engineer, and maintained in the manner required by him. The grantee agrees to pay to the Government of the Canal Zone an annual franchise tax of one per cent on the gross earnings of the railway system in the city of Panama and the Canal Zone, and must keep his books at all times at the disposal of the officers of the Canal Zone Government. The property of the railway system shall be subject to the usual taxes imposed on property under the laws of the Canal Zone. The right to regulate the charges and conditions of service of the railway system in the Canal Zone is reserved to the Canal Zone authorities. The license may be revoked by the President of the United States, whenever he deems it necessary to the public interest to terminate the privilege. The rights to acquire private property by purchase, and private property, except that of the Panama Railroad Company, by condemnation, are granted. The license is granted upon the express condition that not more than 300 meters of the pavements in the city of Panama shall be removed at one time, and that not more than 300 meters of the pavement which has been removed shall at any one time be in a state other than complete restoration, this to apply to one whole strip of pavement, or to the sum of the detached sections. The license may be assigned with the consent of the Secretary of War. The grantee gives a bond in the sum of $10,000 for the restoration and maintenance of the pavements taken up or disturbed by him in the city of Panama during a period of eight and one-half years from November 30, 1910.

Lawn Tennis.

The first tournament for the season of 1911 was held by the Isthmian Tennis Association on the courts of the Panama Tennis Club in the city of Panama on Sunday, January 8. The play was in singles, two out of three sets, and the various clubs were represented, as follows:

PRELIMINARIES.

Pulsifer, Empire	6—8
Poole, Tivoli	1—6
Runyon, Ancon	6—9
Fearon, Panama	2—7
Pulsifer, Empire	6—6
Hart, Colon	4—3
Runyon, Ancon	6—6
Wells, Gatun	3—2

FINALS.

Runyon, Ancon	6—6
Pulsifer, Empire	1—3

The tournament schedule for the balance of the season is: February 5, doubles, on courts of Colon-Cristobal club; March 5, singles, on courts of Empire club; April 2, doubles, on courts of the Panama club; May 7, singles, on courts of Colon-Cristobal club; June 4, doubles, on courts of Empire club. The tournament of April 2 will be for the Maduro-Lupi cup. The clubs at present in the association are: Panama, Tivoli, Ancon, Corozal, Empire, Camp Elliott, Gatun, Cristobal, Colon. The clubs at Culebra and Gorgona have signified their intention of joining. The tournament committee for the season is made up as follows: B. C. Poole, chairman, Tivoli and Panama; Dr. W. M. James, Corozal and Ancon; Chase Pulsifer, Empire and Culebra, and Gatun until further notice; Lieut. T. S. Clarke, Camp Elliott and Gorgona; R. W. Hart, Colon and Cristobal. Inquiries should be addressed to the secretary, Chase Pulsifer, Empire.

The Tivoli Lawn Tennis Club has abandoned the courts at the Hotel Tivoli and constructed two earth courts, with crushed stone surfacing, near the gate to the Ancon Hospital reservation.

Personal.

Lieut. Frank O. Whitlock and family, and Mr. W. B. Corse and family, are among the passengers on the *Panama*, which arrived at Cristobal on January 11.

Culebra Red Cross.

A meeting of the Culebra branch, Canal Zone Red Cross, will be held at the Commission clubhouse in Culebra at 8 o'clock, Friday night, January 13. After the meeting, the members will be entertained at a moving picture show.

EDWARD SCHILDHAUER, *Chairman.*

Culebra, C.Z., January 9, 1911.

S. F. and H. I. A.

The next regular meeting of the Steam Fitters and Helpers Local Union, No. 95, will be held at Cristobal lodge hall on Sunday, January 15, at 4 p. m. All members are requested to be present.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Paraiso, C. Z., on Sunday, January 15, 1911, at 2 p. m. The program follows:

1 March—*Niebelungen* .... Moses
2 Selection—*Madame Sherry* .... Hoschna
3 Waltz—*Cupid Astray* .... Rolfe
4 Overture—*Lustspeil* .... Keler Bela
5 *Procrastination* .... Cobb
6 Medley Selection—*My Southern Rose* .. Von Tilzer
7 Flower Song—*Hearts and Flowers* .... Tobani
8 Intermezzo—*Silver Bell* .... Wenrich
9 March—*New Colonial* .... Hall

CHAS. E. JENNINGS, *Musical Director.*

The next concert will be given at Gatun on Sunday, January 22, at 2 p. m.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending January 18, 1911: (75th meridian time):

DATE.	High.	Low.	High.	Low.
	A. M.	A. M.	P. M.	P. M.
January 12	12.35	7.10	1.20	7.35
January 13	1.40	8.08	2.20	8.35
January 14	2.40	9.03	3.18	9.30
January 15	3.33	9.55	4.10	10.20
January 16	4.25	10.45	5.00	11.10
January 17	5.10	11.30	5.42	11.58
		P. M.		
January 18	6.00	12.20	6.30	......

Proposals for Excavation, Gold Hill Line, Relocation, Panama Railroad.

Sealed proposals for railroad grading on the new line of the relocation, Panama railroad, situated on the east side of the Culebra Cut, opposite the towns of Empire and Las Cascadas, will be received until 1 p. m., January 16, at the office of the Chief Engineer, P. R. R., Colon, and then opened.

This excavation consists of two distinct sections, as follows:

The first section, between station 1461 and station 1535, consisting of approximately 90,000 cubic yards.

The second section extends from station 1580 to station 1700, and consists of approximately 110,000 cubic yards.

As time is an essential element, the contract for both of the above sections will not be awarded to any one man.

Bids should be submitted on a flat price per cubic yard of excavation, without classification, and should contemplate finishing the work by August 1, 1911.

Full information will be furnished upon application to the office of Chief Engineer, Panama railroad. The railroad company reserves the right to reject any and all bids.

Envelopes containing proposals should be endorsed "Proposals for Railroad Grading, Gold Hill Line, Relocation, Panama Railroad," and addressed to F. Mears, Chief Engineer, P. R. R., Cristobal, C. Z.

BASEBALL.

PANAMA CANAL LEAGUE.

RESULTS OF GAMES, JANUARY 8.

At Ancon— Ancon, 6; Gorgona, 8.
At Empire—Empire, 9; Atlantics, 1.
At Colon— Commissary-Subsistence, 13; Marines, 3

STANDING OF CLUBS.

	P.	W.	L.	P.C.		P.	W.	L.	P.C.
Com-Sub.	3	3	0	1.000	Gorgona.	3	2	1	.667
Ancon...	3	2	1	.667	Atlantics	3	0	3	.000
Empire..	3	2	1	.667	Marines.	3	0	3	.000

SCHEDULE FOR JANUARY 15.

At Ancon— Gorgona vs. Ancon.
At Empire—Atlantics vs. Empire.
At Colon— Marines vs. Commissary-Subsistence.

SUMMARIES OF GAMES JANUARY 8.

C.-S.	AB.	H.	PO.	A.	E.	Marines.	AB.	H.	PO.	A.	E.
Sullivan,3b.	4	2	0	1	1	McCabe,c..	3	2	11	2	1
Breiv'gle,2b	5	1	2	2	1	Maguire,1b.	4	0	9	0	1
Curtis,ss...	4	3	0	0	1	Shepard,3b.	3	0	0	1	2
Mosher,1b.	5	2	10	0	0	Silke,lf.....	3	0	0	0	1
McCusty,c.	5	1	15	2	0	McKelvey,rf	5	0	1	0	1
Coffin,rf...	5	1	0	0	1	Austin,2b..	4	0	0	4	0
Hodnett,lf.	3	1	0	0	0	Field,ss....	4	1	0	2	1
Jones,cf...	5	1	0	0	0	Burns,cf ..	3	0	1	0	0
Kellogg,p..	5	1	0	2	0	Buckley,p..	2	0	0	5	0
						Richards,ss.	0	0	0	0	0
Totals...	41	13	27	7	4	Totals...	31	3	*22	14	7

Marines..........	0	0	0	0	0	0	3	0	0— 3
Com.-Subsistence..	2	0	0	1	5	4	1	0	x—13

Runs—C.-S.: Sullivan, Breivogle, Curtis (2), Mosher (2), McCusty (2), Coffin, Hodnett (2), Jones (2); Marines: McCabe, Field, Burns. Runs earned— C.-S., 9; Marines, 2. Two base hits—Sullivan, Curtis (2), Mosher, Hodnett. Sacrifice hits—Curtis, Hodnett, Buckley (2). Stolen bases—Sullivan, Breivogle, Curtis, McCusty, Hodnett, Jones, Kellogg, McCabe, Silke. Bases on balls—Off Kellogg, 2; off Buckley, 1. Struck out—By Kellogg, 17; by Buckley 5. Hit by pitcher—By Buckley, Sullivan; hy Kellogg, Silke, Burns. Left on bases—C.-S., 8; Marines, 7. First base on errors—C.-S., 4; Marines, 4. Umpire—Freel. Time of game—1.55. Scorer—J. P. Mead. Attendance—260.

*Hodnett hit by batted ball, Breivogle bunted 3d strike.

Empire.	AB.	H.	PO.	A.	E.	Atlantics.	AB.	H.	PO.	A.	E.
Bryan,3b..	5	0	0	1	0	Edwards,1b	4	1	10	0	2
Moore,c...	4	1	12	1	0	Gamble,lf..	2	1	1	0	0
Dixon,ss...	3	1	1	3	1	Herring,3b.	4	0	0	5	1
Markley,2b	3	0	0	3	0	Sullivan,cf..	1	0	0	0	0
Fluharty,rf.	3	0	0	0	0	Purchase,cf.	1	0	1	3	2
Bell,1b....	4	0	12	1	0	Dou'erty,2b	4	0	3	2	0
Toone,lf...	3	0	1	0	0	Thompson,c	4	0	4	0	1
Murphy,cf.	4	2	0	0	0	Hennessy,ss	2	0	1	0	0
Willis,p....	0	0	1	0	1	Osborne,rf..	3	1	1	1	0
Marshall,p.	3	3	0	0	0	Johnston,p.	2	0	1	0	0
*Barnes...	1	0	0	0	0	Davis,p....	2	0	2	1	0
Totals...	33	7	27	9	2	Totals...	29	3	24	12	6

Empire............	1	1	0	3	2	0	0	2	x—9
Atlantics..........	0	1	0	0	0	0	0	0	0—1

*Batted for Willis.

Runs—Empire: Moore, Dixon, Markley, Bell, Toone (3), Murphy (2); Atlantics: Hennessy. Runs earned—Empire, 4. Two base hits—Moore, Marshall (2), Edwards. Home run—Dixon. Sacrifice hits—Dixon, Fluharty, Osborne. Hits—Off Willis, 2 in 2 innings; off Marsnall, 1 in 7 innings; off Johnston, 5 in 5 innings; off Davis, 2 in 3 innings. Stolen hases—Markley (3), Fluharty, Toone, Murphy (2), Edwards (2), Gamble, Hennessy. Bases on balls—Off Willis, 3; off Marshall, 2; off Johnston, 2; off Davis, 1. Struck out—By Willis, 3; by Marshall, 6; by Johnston, 2; by Davis, 2. Hit by pitcher—By Willis, 1; by Marshall, 1. Left on bases—Empire, 4; Atlantics, 8. Double play—Davis to Dougherty. Umpire, Irwin. Time of game—2.10. Scorer—Moeller.

Gorgona.	AB.	H.	PO.	A.	E.	Ancon.	AB.	H.	PO.	A.	E.
Briggs,2b..	5	2	3	1	0	R.Dre'an,2b	5	2	1	0	0
Clement,ss.	5	1	7	0	2	L.Dre'an,cf.	5	1	1	0	0
Barney,c...	4	3	10	2	1	Tinsley,lf...	4	2	0	0	0
Wright,1b..	5	1	5	0	0	Smith,2b...	5	3	3	1	0
Emery,lf...	4	2	0	0	0	Potter,ss...	5	1	3	5	1
Trotter,p..	4	2	0	3	1	Pearman,3b	3	0	0	0	2
Bailey,3b..	2	0	1	2	1	Nygren,1b..	3	1	6	0	0
Burford,rf..	4	0	1	0	0	Caldweell,c.	4	2	13	2	2
Calvert,cf..	4	1	0	1	0	Hull,p.....	4	0	0	1	1
Totals...	37	12	27	9	5	Totals	.38	12	27	9	6

Gorgona...	3	0	0	0	1	0	0	2	2—8
Ancon.............	4	0	0	1	0	1	0	0	0—6

Runs—Gorgona: Briggs (2), Barney (3), Wright, Emery (2); Ancon: R. Drennan, L. Drennan (2), Tinsley (2); Smith. Runs earned—Gorgona, 2; Ancon, 2. Two base hits—Clement, Barney. Home runs—Barney, Emery. Stolen bases—L. Drennan, R. Drennan, Pearman, Caldwell. Bases on balls—Off Trotter, 1; off Hull, 1. Struck out—By Trotter, 10; by Hull, 11. Hit by pitcher—By Trotter, Pearman, Tinsley; by Hull, Bailey (2). Left on bases—Gorgona, 5; Ancon, 7. Double play—Potter to Smith to Nygren. Umpire—Bayne. Time of game—2.15. Scorer—J. K. Munroe.

SUMMARY OF EMPIRE-GORGONA GAME, JANUARY 1.

Runs—Gorgona: Briggs, Ridge, Wright, Clement, Emery (2); Empire: Markley, Toone. Runs earned—Gorgona, 4; Empire, 1. Two base hits—Dixon, Markley, Briggs, Ridge. Home run—Emery. Sacrifice hits—Lyon, Ridge. Stolen base—Murphy. Bases on balls—Off Willis, 1. Struck out—By Marshall, 6; by Willis, 2; by Trotter, 10. Hit by pitcber—By Willis, 1. Left on bases—Empire, 4; Gorgona, 6. Double plays—Marshall to Barnes to Markley.Hits—Off Marshall, 10 in 6 innings; off Willis, 3 in 3 innings; off Trotter, 5 in 9 innings. Umpire—Bayne. Time of game—2.10. Scorer—Moeller.

Gorgona.	A.	BH.	PO.	A.	E.	Empire.	AB.	H.	PO.	A.	E.
Briggs,2b..	5	2	4	3	0	Bryan,3b...	4	0	0	1	0
Ridge,3b...	3	1	1	1	0	Dixon,ss...	4	2	1	3	1
Barney,c...	5	3	10	0	0	Moore,c....	4	0	9	1	0
Wright,1b.	5	2	11	4	1	Markley,2b.	4	1	2	1	1
Clement,ss.	4	0	1	3	2	Toone,lf....	4	1	0	0	0
Emery,lf...	4	2	0	0	0	Lyon,rf....	3	0	0	0	1
Trotter, p..	4	2	0	1	0	Murphy,cf.	4	0	1	0	0
Calvert,cf..	4	1	0	0	0	Barnes,1b..	3	1	10	1	0
Kinney,rf..	3	0	0	0	0	Marshall,p.	2	0	2	4	0
						Willis,p....	1	0	2	2	0
Totals...	37	13	27	12	3	Totals...	33	5	27	13	3

Gorgona...........	0	0	0	0	0	4	0	2	0—6
Empire............	0	0	0	0	0	0	2	0	0—2

SUMMARY OF EMPIRE-GORGONA GAME, JANUARY 2.

Gorgona.	AB.	H.	PO.	A.	E.	Empire.	AB.	H.	PO.	A.	E.
Briggs,2b..	3	0	1	4	0	Bryan,3b...	2	1	0	1	0
Ridge,3b...	4	0	2	2	1	Moore,c....	3	1	13	0	0
Barney,c...	3	0	8	1	0	Dixon,ss...	2	0	2	0	0
Wright,1b.	4	0	9	1	0	Bell,1b.....	4	1	7	2	0
Clement,ss.	3	1	2	1	0	Markley,2b.	3	0	1	1	0
Trotter, cf.	3	0	1	0	0	Polk,rf.....	4	0	0	0	1
Emery,lf...	4	1	0	0	0	Toone,lf....	2	1	2	0	0
Burford,rf.	4	1	0	0	0	Murphy,cf.	2	0	2	0	0
Bailey,p...	2	1	1	3	0	Barnes,p...	3	2	0	4	0
Totals...	30	4	24	12	1	Totals...	25	6	27	8	1

Gorgona...........	0	0	0	0	0	0	0	0	0—0
Empire............	0	0	1	0	0	0	0	3	x—4

Runs—Empire: Bryan, Moore, Toone, Barnes. Runs earned—Empire, 3. Two base hits—Moore, Bell, Bailey. Sacrifice hits—Moore, Dixon, Markley, Murphy, Barney. Stolen bases—Dixon (2), Clement (3). Bases on balls—Off Barnes, 2; off Bailey, 3. Struck out—By Barnes, 11; by Bailey, 7. Hit by pitcher—By Barnes: Clements, Trotter. Left on Bases—Empire, 5; Gorgona, 7.Hit by batted ball—Markley. Umpire—McCauley. Time of game—2.00. Scorer—Moeller.

Married.

RIEDER VON RIEDENAU-SCHULTZ—At St. Luke's Church, Ancon, C. Z., on Saturday, December 24, 1910, Catherine M. Schultz to G. Ehrhardt Rieder von Riedenau, the Ven. Archdeacon Henry B. Bryan officiating. Canal Zone residence, Cristobal, C. Z.

December Rainfall for Three Years.

Station.	1908	1909	1910	Station Average	Years of Record	Rai'y days 1910
Pacific Section–						
Ancon......	4.16	12.39	10.63	4.40	14	21
Balboa.....	4.61	12.12	9.79	6.45	12	22
Miraflores...	9.41	14.53	8.71	10.88	3	21
Pedro Miguel	10.27	11.30	9.61	10.39	3	20
Rio Grande	5.53	10.56	10.90	7.02	6	18
Central Section–						
Culebra.....	4.40	10.58	11.86	8.19	20	21
Camacho...	7.80	10.54	11.65	8.34	5	21
Empire.....	5.09	9.44	9.06	6.61	7	19
Gamboa....	6.92	12.33	13.11	7.31	28	23
Alhajuela...	4.02	22.90	15.49	8.04	12	20
El Vigia....	3.69	10.90	16.01	10.20	3	21
Gorgona....	......	12.82	15.71	8.41	6	24
San Pablo...	4.12	12.10	19.65	9.88	4	29
Tabernilla...	3.25	13.59	17.72	9.85	4	27
Bohio......	3.40	20.53	21.30	11.25	16	28
Trinidad....	7.23	18.49	21.64	15.79	3	29
Monte Lirio	6.34	24.08	23.96	14.74	4	31
AtlanticSection–						
Gatun......	7.95	31.66	19.24	15.83	6	25
Brazos Brook	9.48	36.45	20.15	17.56	5	28
Cristobal....	9.07	34.38	15.20	12.58	40	28
Porto Bello..	25.72	58.17	22.89	30.07	4	30
Nombre de D	......	36.04	21.51	22.43	3	28

Bids for Lease of Buildings.

Bids will be received by the Collector of Revenues up to and including January 25, 1911, for the leasing to the highest bidder, from February 1, 1911, for a period of not more than three years, of building No. 30 at Paraiso, owned by the Canal Zone Government. The building is of French construction, one story, contains two rooms, and one oven. Bids should be enclosed in envelopes addressed to the Collector of Revenues, marked "Bids for a lease to Building No. 30 at Paraiso." TOM M. COOKE, *Collector of Revenues.*

Bids will be received by the Collector of Revenues, up to and including January 25, 1911, for the leasing to the highest bidder, from February 1, 1911, for a period of not more then three years, of building No. 16 at Empire, owned by the Canal Zone Government. The building is of French construction, two stories, and contains, in all, 12 rooms. Bids should be in envelopes marked "Bids for a lease to Building No. 16 at Empire."

TOM M. COOKE, *Collector of Revenues.*

Rainfall from December 1 to 31, Inclusive.

Stations.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	1.86	2	10.63
Balboa......................	2.00	10	9.79
*Miraflores..................	2.03	3	8.71
Pedro Miguel................	2.54	3	9.61
Rio Grande..................	2.41	1	10.90
Central Section—			
Culebra.....................	2.95	1	11.86
*Camacho....................	3.48	1	11.65
Empire	1.71	4	9.06
Gamboa......................	2.57	4	13.11
Alhajuela...................	2.63	6	15.49
*El Vigia...................	3.55	3	16.01
*Gorgona	3.40	3	15.71
San Pablo	3.24	3	19.65
Tabernilla..................	2.47	3	17.72
Bobio.......................	3.02	4	21.30
*Monte Lirio	4.84	21	23.96
Atlant c Section—			
Gatun.......................	4.24	21	19.24
*Brazos Brook...............	4.72	21	20.15
Cristobal...................	2.51	4	15.20
Porto Bello.................	6.01	15	†22.83
*Nombre de Dios.............	3.72	4	21.51

Rainfall from January 1 to 7, Inclusive.

Pacific Section—	*Ins.*		*Ins.*
Ancon.......................	.29	1	.29
Balboa......................	.28	1	.28
*Miraflores.................	.04	1	.04
Pedro Miguel................	00	....	00
Rio Grande..................	.01	1	.01
Central Section—			
Culebra.....................	.01	1	.01
*Camacho....................	00	....	00
Empire......................	00	....	00
Gamboa......................	.03	1	.04
*Juan Mina..................	00	....	00
Alhajuela...................	00	....	00
*El Vigia...................	00	....	00
*Gorgona....................	.20	1	.20
San Pablo...................	.14	1	.15
Tabernilla..................	.04	1	.04
Bobio.......................	00	....	00
*Monte Lirio................	.03	5	.09
Atlantic Section—			
Gatun.......................	.15	3	.22
*Brazos Brook...............	.03	6	.03
Cristobal...................	.08	3	.15
Porto Bello.................	.07	5	‡.12
*Nombre de Dios.............	.05	4	.05

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

†To 5 p. m., December 30.

‡To 5 p. m., January 5.

Auction Sale of Dairy Cows.

On Wednesday, January 18, at 10 a. m., there will be sold at public sale at the Ancon Hospital dairy, four dairy cows, ranging in age from seven to 10 years. The dairy is located near the insane asylum buildings in the rear of the hospital grounds. The terms of the sale will be cash.

CHAS. F. MASON, *Superintendent.*

Ancon, C. Z., December 28, 1910.

WEATHER CONDITIONS, CANAL ZONE, DECEMBER, 1910.

Stations.	Press're (reduc'd to mean of 24 hours.)	Temperature.					Mean relative humidity.	Precipitation			Wind.				
		Mean	Maximum.	Date.	Minimum	Date.		Total inches.	Station average.	Number of rainy days.	Total movement (in miles.)	Prevailing direction.	Max. velocity (in miles.)	Direction.	Date
Cristobal.	29.877	77.4	82	31	71	30	89	15.20	12.58	28	8,532	N.	38	N.	3
Culebra	29.865	77.4	87	23	68	28	93	11 86	8.19	21	5,669	N.W.	24	N.	19
Ancon........	29.856	79.2	91	30	68	29	91	10 63	4.40	21	5 485	N.W.	24	N.	24

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

The standing in the billiard tournament is as follows:

Name.	Won.	Lost.	Name.	Won.	Lost.
Bayne......	4	4	Hepler.....	5	4
Case........	4	3	Silver......	4	4
Conlan.....	5	3	Soderberg...	4	4
Dubois.....	1	7	Thomson...	4	4
French.....	6	2	Clark......	2	6
Hall........	5	3			

Motion pictures will be shown on Friday evening, January 13.

All the men interested in the track and field meet to be held at the Empire park on Washington's Birthday, should begin training now. All the standard events will be contested excepting the discus.

The Culebra Glee Club is planning a concert for February 22.

Gorgona and Culebra played their last league basketball game on Saturday night at Culebra. The score was 25 to 27 in favor of Culebra.

There is being organized a topic club on "Life Problems," including social, business, political, and health topics. A meeting of the club will be held every Wednesday evening from 7.30 to 8 o'clock. The leaders for these discussions are Messrs. French, Nellis, Freeman, and Warner.

EMPIRE.

Arrangements have been made by the superintendent of clubhouses whereby films will be rented weekly for each clubhouse from the firm of John Hanna and Company of Panama. This assures a good moving picture show at least once a week. The first set of these films were exhibited on Tuesday evening, January 10.

At a meeting of bowlers held on Monday evening, January 9, it was decided to form a local league to consist of teams from Culebra Cut, Empire shops, Central Division, Examiner's office, Disbursing office, and the post-office. The games will start about February 1.

The following will be the program of the literary and debating society at its meeting on Friday evening, January 13: Biography of Andrew Jackson, J. H. McLean; parliamentary quiz, J. C. Forman; debate, "Resolved that recent political events indicate an early dissolution of the two great political parties of the United States of America." Affirmative, Messrs. Howe and Christopherson; negative, Messrs. Meirowitz and Cheney. No judges will be appointed, but the president will call for a standing vote. Critic, F. P. Wagg.

The high score for duckpins for the week was made by Rodeghiero, who rolled 102. Parkis made the high score in tenpins with 203. Duckpins are rolled Mondays, Wednesdays, and Fridays, and tenpins the remaining days.

Gray's orchestra will give a concert in the clubhouse on Thursday evening, January 12. Both men and women are invited to attend.

On Saturday evening, January 14, Hirsh and DePoorter will play the last half of their match pool game for the championship of the Isthmus.

Out of a population of 541 men eligible, Empire now has a total membership of 370, a percentage of membership, according to population, of 68.

Rehearsals for William Gillette's farce "All the Comforts of Home," will begin on Friday evening, January 13. The play will be under the direction of C. C. Carr.

GORGONA.

Gatun won three games in the league bowling match rolled on Gorgona's alleys on Saturday night, January 7, by the following scores:

Gatun.				Gorgona.			
Severn......	148	146	166	Roper.....	134	145	144
Wolf.......	161	159	190	Otis.......	143	153	157
DeMoll.....	110	168	170	White.....	158	171	166
C.R.Har'ton.	184	182	197	Bordt.....	148	139	175
Barte.......	164	182	175	M.Varen'p.	135	161	189
Total.....	767	837	898	Total...	718	769	831

The following 200, or over, scores were rolled during the week ending January 7: Stoehr, 214; Stewart, 205; Misal, 209; Mrs. Cochran, 200. High score in duckpins was made by James Murray, with 102. High average in tenpins for the week was made by Trotter, 177. Mr. White and Mr. Varenkamp tied for high average during December, both having an average of 174. Mr. White rolled 15 games, and Mr. Varenkamp, 13. Eighty-nine different people used the Gorgona alleys during December. Mr. White has been presented with a silver medal for high score for November, 1910.

About 200 men attended the meeting of the discussion club held on January 4. F. G. Swanson led the discussion. G. W. Griggsby led the discussion at the meeting held January 11, the subject being, "Is Democracy Dead?" These meetings are held every Wednesday night at 7.30 in the game room, and all the men of Gorgona are invited to attend.

At the song service held on January 5, at 6.45, p. m., F. E. Murray gave a short talk. A service of this kind is held every Sunday evening at the same hour, except the fourth Sunday in the month, when the time is 8 o'clock.

On Saturday night, January 12, a stereopticon show will be given by Frank Jackson on the "Ruling Princes and Palaces of India." Mr. Jackson spent four years in India.

GATUN.

The first half of the 300-ball match at continuous pool for the championship of the Isthmus was played at Gatun before an audience of 100 spectators on Saturday evening, January 7. The contestants were Mr. DePoorter of Gatun, and Mr. Hirsh of Empire. Mr. DePoorter took the lead by runs of 31, 29, and two of 15, and the score at the end was: DePoorter, 154; Hirsh, 63. The remaining half will be played at Empire on Saturday, January 14, at 8 o'clock. The winner will receive a handsome gold medal, especially designed to represent the championship of the Isthmus. In order that the medal may become his personal property, the winner must successfully defend it three consecutive times, if challenged, within three months. Should the winner receive no challenge by April 15, the medal becomes his property by forfeit.

The following are the 10 high average men in tenpins for the month of December, 1910: Barte, 168; Luckey, 162; Severn, 162; Kerr, 155; Hodges, 153; C. A. Harrington, 152; Kiernan, 151; O'Meara, 150; Webb, 149; Wilson, 146. Duckpins—Durand, 92; Barte, 92; DeMoll, 88; Severn, 87; Bull, 85; Jones, 82; Luckey, 82; Murray, 82; Myers, 81; Teimer, 80.

Several names have been added to the list of the gymnasium class. Physical Director Ludwig announces that handball and indoor baseball will be given special attention from now on.

A chess tournament will be started in the near future.

A discussion course on "Life Problems," or studies in the native interests of young men, will be started next week.

OFFICIAL CIRCULAR.

Reduction of Stock in Store.

Culebra, C. Z., January 7, 1911.

CIRCULAR No. 355-A:

The material now carried in stock by the Commission is valued at nearly five million dollars. Heretofore, the object of the material and supply branch has been to keep on hand at all places all classes and kinds of stores. The work has now reached a point where, to avoid a large accumulation of material at the completion of the Canal, it becomes necessary to reduce the stock carried, even at the risk of occasionally running short of some article. It is not intended to embarrass the work for lack of material, but on "nonactive" stock it is proposed to resort to substitution and emergency requisitions, when necessary, rather than maintain a large reserve supply of material for which there is only an occasional call.

Division engineers are instructed to cooperate with storekeepers in carrying out this policy, and also in placing their United States and local requisitions for any stock. The consumption records of the Quartermaster's Department should be consulted in such cases, to avoid duplication and the accumulation of unnecessarily large stocks.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal, Colon, and Balboa during the weeks ending December 31, 1910, and January 7, 1911:

Aldershot, December 24, from Gulfport and Mobile, with 215 pieces piling for Atlantic Division; 71,297 feet yellow pine lumber for Mechanical Division; 431,109 feet yellow pine lumber, 26 coils rope for stock.

Prinz August Wilhelm, December 25, from New York, with 131 cases blasting caps for stock.

Lovland, December 26, from Jacksonville, with 38,568 cross-ties for stock.

Vatalia, December 27, from Baltimore, with 25,000 cases dynamite for stock.

Colon, December 28, from New York, with 22 cases castings, 5 cases electrical supplies 7 reels wire rope, 6 bales rubber belting for Atlantic Division; 8 cases springs, 5 cases dipper tips for Central Division; 8 cases X-ray apparatus, 67 cases drugs and sundries, 40 kegs drugs, 90 kegs soap for Sanitary Department; 20 cases water coolers, 10 cases varnish, 30 kegs nuts, 18 crates brooms and handles, 35 bales hose, 150 cases toilet paper, 32 cases electrical material, 15 bundles black pipe for stock; and a miscellaneous cargo, the whole consisting of 763 packages weighing 160 tons.

Horsley, December 28, from New York, with 5,151 barrels cement for Atlantic Division; 101,336 bags cement for Pacific Division.

Turrialba, December 29, from New Orleans, with 190,165 feet yellow pine lumber for Atlantic Division; 31 pieces cypress piling for Pacific Division; 9 barrels journal bearings, 16 packages castings for Mechanical Division; 41 cases steel castings for Central Division; 45,763 feet oak lumber, 408 bales alfalfa hay, 1,051 bales prairie hay, 400 sacks bran, 30 cases lantern globes for stock.

Santa Marta, December 29, from New York, with 9 crates concrete machinery for Atlantic Division; 25 bundles brooms, 47 packages drift bolts, 100 bales oakum for stock.

St. Andrews, January 3, from Baltimore, with 44,793 pieces steel bars, 44 pieces steel beams, 231 tons lock construction material, 16 crates lock construction material, 60 pieces lock construction material for Atlantic Division; 4,195 pieces steel bars, 968 bundles steel bars, 231 tons lock construction material, 84 crates lock construction material, 54 pieces lock construction material for Pacific Division; 1,263 bundles galvanized corrugated iron, 958 pieces block pipe, 225 tons steel bars, angles, etc., 3,834 pieces sewer pipe, 1,925 car wheels, 215 tons smithing coal for stock.

Sarnia, January 4, from New York, with 200 barrels carbolic acid for stock.

Strathtay, January 4, from Tacoma, with 419 pieces Douglas fir piling, 1,366,026 feet Douglas fir lumber for Atlantic Division; 78,773 feet Douglas fir lumber for Central Division; 23,601 feet Douglas fir lumber for Pacific Division; 583,380 feet Douglas fir lumber, 1,667 Douglas fir cross-ties; 485 pine ties, 13 cases blasting caps for stock.

Advance, January 5, from New York, with 9 cases electrical machinery, 2 pieces dredge parts for Atlantic Division; 38 coils insulated copper wire for Pacific Division; 25 cases drugs for Sanitary Department; 34 barrels rosin, 12 cases electrical material, 66 cases incandescent lamps, 250 kegs bolts, 105 cases bolts, 238 kegs rivets, 100 car wheels, 42 cases cork life preservers, 41 pieces iron pipe-fittings for stock; and a miscellaneous cargo, the whole consisting of 1,218 packages, weighing 190 tons.

Abangarez, January 5, from New Orleans, with 23,563 feet yellow pine lumber, 42 reels wire rope, 8 crates machinery, 6 barrels machinery for Atlantic Division; 132,684 feet yellow pine lumber, 250 crates fire brick, 240 sacks cotton seed meal for stock.

Metapan, January 5, from New York, with 18 crates machinery for Atlantic Division; 218 crates handles, 10 cases copper wire, 55 reels copper wire, 100 cases tallow candles for stock.

Misdirected Letters.

Ancon, C. Z., January 7, 1910.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received in the office of the Director of Posts, and may be secured upon request of the addressees:

LETTERS UNCALLED FOR DECEMBER 30, 1910.

Barry, J. W.
Barry, Tom
Cassimos, Geo. Kristo
Chase, Harry B.
Christy, W.
Clark, George
Cushing, R. E. L.
Dision, William O.
Frekland, John
Gates, I. N.
Geddes, C. R.
Gustafson, Gust (2)
Harrison, Robert W.
Helmer, Jos. H.
Herson, Chas. N.
Hinman, H. D.
Hurey, David
Kerias, Cleomenis
Lloyd, John H.
Lyew, Henry
McCullock, A. P.
Larsberg, Lieut. Oscar
Stiles, Albert I.
Terrell, Capt.
Tompkins, Herbert
Thurston, L. A.
Touscan, Louis
Tryon, A. A.
Wagner, Chas. P.
Zimmerman, B. Frank

LETTERS UNCALLED FOR JANUARY 7, 1911.

Baerwald, Miss Louise
Barnes, Thomas W.
Bartlett, W. J.
Bennett, Timothy
Bowen, Richard (pkg.)
Brubacher, J. C. (1)
Carter, Robert H.
Chamberlain, Mrs. D. T.
Coleman, Thos. (D. L.)
Conkerton, J. H.
Connolly, Donald H.
Crooks, G. C.
Falk, L.
Fink, Charley
Garvey, Miss Ethlin
Granbeck, Victor
Guirney, James
Hastings, Louis B.
Harry, Edmund B.
Heines, Theodore
Herrsom, Chas.
James, R. E.
Lewis, Belfield
Leufel, John
Main, Lester
Martin, Mrs. Laura Zellar
Metcalf, B. F.
Mitten, Dr. H. W.
Morris, T. C. (pkg)
McCandless, Mrs. Chas.
McPherson, Mrs. Geo. W.
O'Donnell, A.
Owyang, King
Rayburn, J. L.
Renaud, Ernest L.
Shaw, W. F.
Schneider, J. M.
Schwan, Leonard
Sharp, Joshua
Shearer, W. H.
Simons, B. M.
Smart, Benj.
Smith, A. O.
Smith, Chas. L.
Smith, Lt. Walter D.
Steekes, Jos.
Stuart, Montgomery A., "U. S. A." (pkg.)
Stewart, Wooster B.
Tomkins, Herbert
Thompson, Russell
Thompson, Frank
Valdese, Sr. Raymond
Williams, Geo.
Williamson, N. E.
Winchester, John J.
Wood, Archibald
Wood, Geo. (F. ?)

LOST—Tuesday evening, January 3, between 5 and 5.30 o'clock, a Masonic watch charm and fob, between the Cut at Empire bridge, and the Empire railroad station. Reward for return to Chas. M. Shute, P. O. box 181, Empire, C. Z.

CANAL DIRECTORY.

ISTHMIAN CANAL COMMISSION.

Col. Geo. W. Goethals, U. S. A., Chairman, Culebra.
Lieut.-Col. H. F. Hodges, U. S. A., Culebra.
Lieut.-Col. D. D. Gaillard, U. S. A., Empire.
Lieut.-Col. Wm. L. Sibert, U. S. A., Gatun.
Civil Engineer H. H. Rousseau, U. S. N., Culebra.
Col. W. C. Gorgas, U. S. A., Ancon.
Mr. Maurice H. Thatcher, Ancon.
Mr. Joseph Bucklin Bishop, Secretary, Ancon.

DEPARTMENTS.

Construction and Engineering.

Headquarters, Culebra.

Col. Geo. W. Goethals, Chairman and Chief Engineer.
William Howard May, Secretary to the Chairman.
C. A. McIlvaine, Chief Clerk.
John K. Baxter, Assistant Chief Clerk.
Ad. Faure, Chief Accountant.
H. S. Farish, Surveying Officer.
Caleb M. Saville, Assistant Engineer.

Lieut.-Col. H. F. Hodges, Assistant Chief Engineer.
C. O. Carlson, Secretary.
Edward Schildhauer, Electrical and Mechanical Engineer.
Henry Goldmark, L. D. Cornish, H. F. Tucker, T. B. Mönniche, Edward C. Sherman, Designing Engineers.

Civil Engineer H. H. Rousseau, Assistant to the Chief Engineer.
J. C. Parsons, Secretary.
Maj. T. C. Dickson, U. S. A., Inspector of Shops.
A. B. Nichols, Office Engineer.
James G Craig, Senior Traveling Engineer.
Arthur C. Stone, D. E. Irwin, Traveling Engineers.

Central Division.

Headquarters, Empire.

Lieut.-Col. D. D. Gaillard, Division Engineer.
W I Beam, Chief Clerk.
A. E. Bronk, General Inspector.
A. S. Zinn, Resident Engineer.
Mark W. Tenny, Assistant Engineer.
W. L. Thompson, Assistant Engineer
J. W. Sneed, Superintendent Construction.
J. M. Hagan, Superintendent Construction.
Joseph Little, Superintendent Construction.
W. T. Reynolds, Superintendent Construction.
A. Sessions, Superintendent Transportation.
William H. Bates, Supt. Steam Shovel Repairs.
Dan E. Wright, Supt. Municipal Work and Pipe Lines.

Atlantic Division.

Headquarters, Gatun.

Lieut.-Col. Wm. L. Sibert, Division Engineer.
Maj. Chester Harding, U. S. A., Assistant Division Engineer.
R. M. Sands, Chief Clerk.
Maj. Edgar Jadwin, U. S. A., Resident Engineer.
Maj. J. P. Jervey, U. S. A., Resident Engineer.
Maj. G. M. Hoffman, U. S. A., Resident Engineer.
Capt. Horton W. Stickle, U. S. A., Assistant Engineer.
Geo. M. Wells, Office Engineer.

Pacific Division.

Headquarters, Corozal.

S. B. Williamson, Division Engineer.
John M. G. Watt, Assistant Division Engineer.
J. C. Keller, Chief Clerk.
W. G. Comber, Resident Engineer.
W. B. Corse, Resident Engineer.
H. O. Cole, Assistant Engineer.
Frank Cotton, Assistant Engineer.
James Macfarlane, Supt. of Dredging.

Mechanical Division.

Headquarters, Gorgona.

A. L. Robinson, Superintendent.
William Taylor, Chief Clerk.
J. H. Flynn, Mechanical Engineer

Subsistence.

Headquarters, Cristobal.

Maj. Eugene T. Wilson, U. S. A., Subsistence Officer.
Lieut. Frank O Whitlock, U. S A Assistant Subsistence Officer.
W. F Shipley, Chief Clerk.
John Burke, Manager of Commissaries

Quartermaster's.

Headquarters, Culebra.

Lieut.-Col. C. A. Devol, U. S. A., Chief Quartermaster.
Lieut. R. E. Wood, U. S. A., Assistant Chief Quartermaster.
Lieut. Walter D. Smith, U. S. A., Constructing Quartermaster.
C. H. Mann, Chief Clerk.
Capt. C. Nixon, U. S. A., Depot Quartermaster, Mount Hope.
C. L. Parker, Assistant Depot Quartermaster, Mount Hope.
Chas. R. Bryon, Storekeeper, Gatun.
R. K. Morris, Storekeeper, Gorgona.
F. W. Miracle, Storekeeper, Empire.
Robert Wuerz, Storekeeper, Miraflores.
X. D. Holt, Storekeeper, Balboa.

District Quartermasters.

B. C. Poole, Ancon and Balboa.
A. R. Bennett, Corozal and Miraflores.
J. T. Smith, Pedro Miguel and Paraiso.
H. F. Sedwick, Culebra.
W. G. Ross, Empire.
J. M. King, Las Cascadas and Bas Ohispo.
R. C. Shady, Gorgona.
J. H. K. Humphreys, San Pablo, Mamei, Tabernilla and Bohio.
W. C. Poore, Acting, Gatun
Roy R Watson, Cristobal and Toro Point.
Chas. D. Morgan, Porto Bello and Nombre de Dios.

Civil Administration.

Headquarters, Ancon.

Maurice H. Thatcher, Head of the Department.
G. A. Ninas, Chief Clerk.
C. L. Luedtke, Assistant Chief Clerk.
Tom M. Cooke, Chief, Division of Posts, Customs and Revenues, Ancon.
Arthur McGown, Deputy Collector, Ancon.
Jno. L. Storla, Deputy Collector, Cristobal.
J. P. Fyffe, Chief of Police, Ancon.
Lieut. Chas. W Barber, U. S. A., Assistant Chief of Police, Ancon.
C. E. Weidman, Fire Chief, Cristobal.
Chas. F. Koerner, Assistant Fire Chief, Cristobal
J. J. Reidy, Acting Supt. Public Works, Ancon.
F. A. Gause, Superintendent of Schools, Ancon.
Edgar P. Beck, Treasurer of Canal Zone, Empire.
W. G. Comber, Chairman; James Macfarlane, C. J Anderson, Board of Local Inspectors.

Canal Zone Judiciary.

Headquarters, Ancon.

Supreme Court—H. A. Gudger, Chief Justice.
Walter Emery, Clerk, Ancon.
Wesley M. Owen, Associate Justice, Empire.
Circuit Court, First Circuit—H. A. Gudger, Judge, Ancon.
Walter Emery, Clerk.
Circuit Court, Second Circuit—Wesley M. Owen, Judge, Empire.
Elbert M. Goolsby, Clerk.
Circuit Court, Third Circuit—(——————)
Nelson R. Johnson, Clerk.
M. C. Kerdell, Senior District Judge, Cristobal.
S. E. Blackburn, District Judge, Ancon.
Edgar S. Garrison, District Judge, Empire.
J. B. March, District Judge, Gorgona.
Thomas E. Brown, Jr., District Judge, Cristobal.

Law.

Headquarters, Ancon.

Frank Feuille, Counsel and Chief Attorney.
William K. Jackson, Prosecuting Attorney.
Chas. L. Williams, Assistant Prosecuting Attorney.

Sanitation.

Headquarters, Ancon.

Col. W. C. Gorgas, Chief Sanitary Officer.
Lieut.-Col. John L. Phillips, U. S. A., Assistant Chief Sanitary Officer.
Maj. Robert E. Noble U. S. A., General Inspector.
Harry E. Bovay, Chief Clerk.

Lieut.-Col. Charles F. Mason, U. S. A., Superintendent Ancon Hospital, Ancon.
Surgeon Wm. H. Bell, U. S. N., Superintendent Colon Hospital, Cristobal.
Surgeon J. C. Perry, P. H. and M. H. S., Chief Quarantine Officer, Ancon, and Health Officer, Panama.
Surgeon Claude C. Pierce, P. H. and M. H. S. Quarantine Officer, Colon.
Dr. Fleetwood Gruver, P. H. and M. H. S., Quarantine Officer, Panama.
Joseph A. LePrince, Chief Sanitary Inspector, Ancon.
Dr. M. E. Connor, Health Officer, Colon

Disbursements.

Headquarters, Empire.

Edward J. Williams, Disbursing Officer.
Wm M. Wood, Assistant Disbursing Officer

Examination of Accounts.

Headquarters, Empire.

W. W. Warwick, Examiner of Accounts
T. L. Clear, Assistant Examiner of Accounts

Purchasing Department.

Headquarters, Washington, D. C.

Capt. F. C. Boggs, U. S. A., General Purchasing Officer.
C. E. Dole, Chief Clerk.

Capt. Courtland Nixon, Purchasing Agent on the Isthmus.
Maj. Wendell L. Simpson, U. S. A., Assistant Purchasing Officer, 24 State Street, New York City.
Lieut-Col. Geo. B. Davis, U. S. A., Assistant Purchasing Agent, 55 National Realty Building, New Orleans, La.

Panama Railroad Company.

Headquarters, Colon.
(General offices, 24 State Street, New York.)

J. A. Smith, General Superintendent, Colon.
R. L. Mock, Chief Clerk.
Lieut. Frederick Mears, U. S. A., Chief Engineer.
A. K. Stone, Master of Transportation.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL

Allianca	P. R. R.	Tuesday	Jan. 10
Colon	P. R. R.	Monday	Jan. 16
Advance	P. R. R.	Saturday	Jan. 21
Panama	P. R. R.	Saturday	Jan. 28
Allianca	P. R. R.	Saturday	Feb. 4
Colon	P. R. R.	Friday	Feb. 10
Advance	P. R. R.	Thursday	Feb. 16
Panama	P. R. R.	Thursday	Feb. 23
Allianca	P. R. R.	Wednesday	Mar. 1
Colon	P. R. R.	Tuesday	Mar. 7

CRISTOBAL TO NEW YORK.

Panama	P. R. R.	Monday	Jan. 16
Allianca	P. R. R.	Monday	Jan. 23
Colon	P. R. R.	Sunday	Jan. 29
Advance	P. R. R.	Friday	Feb. 3
Panama	P. R. R.	Friday	Feb. 10
Allianca	P. R. R.	Thursday	Feb. 16
Colon	P. R. R.	Wednesday	Feb. 22
Advance	P. R. R.	Tuesday	Feb. 28
Panama	P. R. R.	Tuesday	Mar. 7
Allianca	P. R. R.	Monday	Mar. 13

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 11th and 28th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Zacapa	U. F. C.	Thursday	Jan. 5
Oruba	R. M.	Saturday	Jan. 7
Sibiria	H.-A.	Saturday	Jan. 7
Almirante	U. F. C.	Thursday	Jan. 12
Prinz Aug. Wilhelm	H.-A.	Saturday	Jan. 14
Santa Marta	U. F. C.	Thursday	Jan. 19
Magdalena	R. M.	Saturday	Jan. 21
Metapan	U. F. C.	Thursday	Jan. 26
Prinz Joachim	H.-A.	Saturday	Jan. 28
Zacapa	U. F. C.	Thursday	Feb. 2
Clyde	R. M.	Saturday	Feb. 4
Sibiria	H.-A.	Saturday	Feb. 4

COLON TO NEW YORK.

Metapan	U. F. C.	Thursday	Jan. 12
Prinz Joachim	H.-A.	Tuesday	Jan. 17
Zacapa	U. F. C.	Thursday	Jan. 19
Clyde	R. M.	Monday	Jan. 23
Sibiria	H.-A.	Tuesday	Jan. 24
Almirante	U. F. C.	Thursday	Jan. 26
Prinz Aug. Wilhelm	H.-A.	Tuesday	Jan. 31
Santa Marta	U. F. C.	Thursday	Feb. 2
Thames	R. M.	Monday	Feb. 6
Sarnia	H.-A.	Tuesday	Feb. 7

NEW ORLEANS TO COLON.

Atenas	U. F. C.	Saturday	Jan. 7
Cartago	U. F. C.	Wednesday	Jan. 11
Turrialba	U. F. C.	Saturday	Jan. 14
Parismina	U. F. C.	Wednesday	Jan. 18
Abangarez	U. F. C.	Saturday	Jan. 21
Heredia	U. F. C.	Wednesday	Jan. 25

COLON TO NEW ORLEANS.

Abangarez	U. F. C.	Thursday	Jan. 12
Heredia	U. F. C.	Thursday	Jan. 12
Atenas	U. F. C.	Thursday	Jan. 19
Cartago	U. F. C.	Thursday	Jan. 19
Turrialba	U. F. C.	Thursday	Jan. 26
Parismina	U. F. C.	Thursday	Jan. 26

COLON TO BARBADOS, CALLING AT TRINIDAD.

Oruba	R. M.	Tuesday	Jan. 17

The next sailing of the Leyland Line will be as follows: *Cuban*, on or about January 16, for New Orleans via Kingston, Ja.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, JANUARY 18, 1911. No. 21.

The Canal Record

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Address all Communications
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Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Tabernilla Dump Abandoned.

The dump at Tabernilla, the largest on the Canal work, has been abandoned and will be used henceforth only in case the other dumps become congested, or are temporarily out of use. Spoil from the north of Culebra Cut will be dumped on the relocation of the Panama railroad, and on Gatun Dam. Spoil from the excavation in the Canal prism between San Pablo and Culebra Cut will be wasted on the river dumps.

The dump at Tabernilla was opened in 1906, the location being chosen because of its proximity to the main line of the Panama railroad, and of the large level area for dumping which it afforded, the plot of low ground containing about two square miles. An article in THE CANAL RECORD of October 12, 1910, contained a description of the method used, and a comparison of this dump with others on the Canal work. At that time it was proposed to doubledeck the dump; that is, to build an entirely new dump upon the old one, but on January 1, the site was definitely abandoned. Since the opening in 1906, there have been dumped at this place about sixteen million cubic yards of miscellaneous spoil, and the surface is from 20 to 25 feet above the natural level of the surrounding country. Since the fall of 1909, spoil trains have been gradually diverted from Tabernilla to the relocation of the Panama railroad, where the material is utilized in filling the trestles beween Frijoles and Gamboa. The number of trainloads dumped there each day was reduced from 60 in 1909, to 20 at the time the dump was abandoned.

Canal Work In December.

The grand total of Canal excavation to January 1 was 126,407,064 cubic yards, leaving to be excavated 56,130,702 cubic yards. The total for December was 2,946,404 cubic yards, as compared with 2,811,681 cubic yards in December, 1909, and 3,261,673 cubic yards in December, 1908. Of the total, 2,448,097 cubic yards were "work excavation" and 498,307 cubic yards were "plant excavation." The dry excavation amounted to 1,514,552 cubic yards and was principally by steam shovels. The dredges removed 1,431,852 cubic yards in addition to the amount pumped into Gatun Dam by suction dredges. The progress on the locks at Gatun, Pedro Miguel and Miraflores is referred to elsewhere in this issue.

In the Atlantic Division, the total excavation was 852,912 cubic yards. Of this total, 97,702 cubic yards were dry excavation, and the remainder was removed by the dredges in the Atlantic entrance.

The total excavation in the Central Division was 1,408,881 cubic yards, and further reference to this work is published elsewhere in this issue.

In the Pacific Division, the total excavation was 704,611 cubic yards, 606,829 cubic yards of which were taken out by the dredges at the Pacific entrance.

A detailed statement of the excavation and a summary of the work on the locks and dams, follow:

ATLANTIC DIVISION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation
Dry excavation—	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*
Locks, Dam and Spillway	72,030	25,672	97,702
Mindi	....	....	....
Total	72,030	25,672	97,702
Wet excavation—			
Atlantic entrance	482,370	252,840	735,210
Locks, Dam and Spillway	....	....	....
Total	482,370	252,840	735,210
Total wet and dry excavation	554,400	278,512	832,912

CENTRAL DIVISION.

Dry excavation—			
Culebra Cut	1,211,400	....	1,211,400
Chagres section	176,349	....	176,349
Wet excavation—			
Chagres section	21,132	....	21,132
Total	1,408,881	....	1,408,881

PACIFIC DIVISION.

Dry excavation—			
Locks, Dams and Spillways	29,101	....	29,101
Diversions	....	....	....
Prism, south of Pedro Miguel Locks	....	....	....
Total	29,101	....	29,101
Wet excavation—			
Pacific entrance	387,034	219,795	606,829
Miraflores Locks	68,681	....	68,681
Diversions	....	....	....
Total	455,715	219,795	675,510
Total wet and dry excavation	484,816	219,795	704,611

TOTAL CANAL EXCAVATION.

Dry excavation	1,488,880	25,672	1,514,552
Wet excavation	959,217	472,635	1,431,852
Total	2,448,097	498,307	2,946,404

Mean rainfall along Canal (eleven stations) 14.43 inches.

By "Work" Excavation is meant excavation actually made for one of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc.; that is, it represents material taken from the area to be occupied by the Canal, and constitutes excavation useful for the completed Canal.

By "Plant" Excavation is meant excavation outside of any of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc. It includes material necessary to be excavated for construction purposes only and is chargeable against the particular plant item for which it is performed, such as Prism, Diversions, Locks, etc.

DAM AND LOCK CONSTRUCTION.

MATERIAL.	Atlantic.	Pacific.	Total.
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*
Fill placed in dams	412,696	107,905	520,601
Concrete laid in locks	80,212	64,367	144,579
Concrete laid in dams and spillways	5,597	....	5,597

French Dredges to be Scrapped.

The four old French dredges in the Canal prism at Gorgona and Mamei will be broken up and sold as scrap iron. Three of them are of the Belgian ladder type, and they have been stripped of their engines, chains, brasses, ladders, davits, and other repair parts, which are in use, or will be used, for repairs on the Pacific Division ladder dredges. One of them is a suction dredge, and such parts of it as can be utilized elsewhere will be saved in the scrapping. The excavation in the Canal prism has been carried on around the old hulls, and it was intended at one time to repair such holes as might be found below the water line, and float the dredges after the water in the lake had reached sufficient depth. It has been found that the repairs would be expensive, and, on this account, and, because there will probably be no market for the hulls after the completion of the Canal, when a large part of the present floating equipment will be on the market, it has been decided to break up and remove them from the prism while the construction tracks used in the excavation are still available. The work will be done during the present dry season.

Work Resumed on Colon Storm Sewer.

Work on the D street storm sewer in Colon, which was suspended during the months of November and December on account of the heavy rains, was resumed shortly after January 1. At the time the work was shut down, construction of the sewer had been completed from its north outlet to a point midway between 13th and 14th streets, a distance of 4,800 feet. Excavation of the trench had been advanced as far as 14th street, but in making the hydraulic fill by suction dredge in this part of the city, it was entirely filled in. The total length of the sewer, when completed, will be 6,800 feet, and there remain 2,000 feet to be built, which will probably be accomplished before the end of the dry season. It is a little over seven feet in size from the beach outlet to 3d street; six feet four inches from 3d to 6th streets, the summit elevation; five feet three inches from 6th to 11th streets, and a little over seven feet from 14th street to its

NOTES OF PROGRESS.

(*Continued.*)

south outlet in Folks River. The sea outlet has been practically finished, and during the November rains, that part of the sewer from 6th street to the beach, where a 6-foot head is developed, carried off the water rapidly from sections of the streets in that locality, formerly subject to inundation. Most of the excavation for the sewer has been in a coral rock formation, but between 13th and 14th streets, it was entirely in soft mud, making the digging unusually difficult. This part of the street was at one time under water, and was filled in when the city began to extend in this direction.

Drainage of Culebra Cut.

The central drainage ditch, which carries water from the north side of the summit of Culebra Cut at Empire into the sump at the Gamboa pumping plant, will be deepened during the present dry season sufficiently to take care of the drainage until next year. At Gamboa, the ditch will be at 26 feet above sea level, which is 14 feet below the bottom of the Canal, and the plan is eventually to deepen it to 36 feet above sea level at the summit, near Empire bridge. Only so much of the work as will be necessary to take care of the drainage during the coming wet season will be done this year.

Gatun Dam Spillway.

Concrete was placed in the spillway of Gatun Dam during the weeks ending January 7 and 14, as follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
	Cu. Yds.		
January 2—Holiday	....	....	....
January 3	180	7:30	1
January 4	162	5:30	1
January 5	90	4:00	1
January 6	168	7:00	1
January 7	158	7:30	1
Total	758	31:30	....
Previously reported	112,626		
Grand total	113,384		
January 9	148	5:00	1
January 10	90	3:30	1
January 11	60	6:00	1
January 12	24	1:00	1
January 13	80	4:30	1
January 14	76	5:00	1
Total	478	25.00	
Previously reported	113,384		
Grand total	113,862		

New Train Schedule on Balboa Branch.

A new schedule for the operation of trains on the Balboa branch of the Panama railroad went into effect on January 2, 1911. Three trains have been added to the daily service each way. These leave Panama at 10.40 a. m., 1.50 p. m., and 6.45 p. m., respectively; and Balboa at 10.20 a.m., 1.15 p. m., and 7.25 p. m., respectively. In addition, a train leaves Panama at 10.50 p. m., and returning, leaves Balboa at 11.25 p. m., on working days. On Sundays and holidays, a train leaves Panama at 9.30 p. m., and returning, leaves Balboa at 9.50 p. m. The new schedule makes a change of a few minutes in the time of the arrival and departure of trains at Panama and Balboa, which will be noted in the time table published on another page of this issue of THE CANAL RECORD.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Nearly 50 per cent of the concrete for the system of three twin locks at Gatun has been laid, the exact amount in place at the close of work on January 14 being 1,033,708 cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending January 14, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
January 9	2,148	36:36	6	422	8:40	2	284	2,854
January 10	2,036	32:16	6	368	6:40	2	250½	2,654½
January 11	2,350	38:10	6	464	9:40	2	138	2,952
January 12	2,260	40:35	6	416	8:40	2	145½	2,821½
January 13	1,932	32:12	6	522	8:40	2	140¾	2,594¾
January 14	1,772	29:10	6	468	8:40	2	161½	2,401½
Portable mixer	....	....	......	239	....	......	....	239
Total	12,498	208:59		2,899	51:00		1,120¼	16,517¼
Previously reported	....	....	......	....	....	......	....	1,017,191
Grand total	....	....	......	....	....	......	....	1,033,708¼

*The 239 yards shown for the portable ½-yard mixer were placed as follows: January 9th, 45 yards; January 10th, 52 yards; January 11th, 10 yards; January 12th, 32 yards; January 13th, 44 yards; January 14th, 56 yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is about 60 per cent completed, 497,804 cubic yards, out of a total of 837,400, having been placed at the close of work on January 14. Operations have reached the point where the maximum output of all four of the berm crane mixers cannot be utilized, and, therefore, only two of them are kept at work continuously. On the other hand, the installation of the steel work for the lock machinery is assuming greater proportions as the work advances towards the ends of the lock. In the upper part of the lock, the construction of the west wall is being continued to the point of junction with the wing wall, and excavation for the center wall extension has been resumed. Work on the east wall extension is temporarily suspended. At the south end, construction is proceeding on all three walls, and, in addition, one chamber crane is engaged in placing concrete in the extension of the guide wall to its farthest point north. The placing of the steel castings for the two sluice gates at the south end of the center wall is about completed. These castings form the division and side walls of the gates, the division wall employing three and the side walls two. Each casting occupies a vertical position, is 22 feet high, and weighs a little over 24,000 pounds. In addition, two smaller castings are placed a few feet away, one in front and the other in the rear of the gates, which will serve as a cutwater in the flow from the culvert. Work is also in progress on the installation of two of the Stoney gate valves.

The record of concrete laid during each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
January 9	1,632	21:00	3	178	7:00	2	....	1,810
January 10	1,522	21:00	4	130	5:00	1	....	1,652
January 11	1,494	19:00	3	208	8:00	1	....	1,702
January 12	934	14:50	3	364	10:50	2	12	1,310
January 13	1,628	16:00	2	292	7:00	2	14	1,934
January 14	1,362	14:00	2	266	8:00	2	5	1,633
Total	8,572	105:50	2.83	1,438	45:50	1.67	31	10,041
Previously reported	....	....	......	....	....	......	4,050	487,763
Grand total	....	....	......	....	....	......	4,081	497,804

MIRAFLORES LOCKS.

The record of concrete laid during the six 8-hour working days of last week, follows:

DATE.	AUXILIARY PLANT.										Total.
	2-cubic yard mixers.			½-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
Jan. 9	430	11:33	2	512	33:25	4	13	.75	1	30	*990
Jan. 10	454	11:33	2	339	23:00	4	71	7:00	1	25	†896
Jan. 11	400	11:33	2	361	25:50	4	122	9:00	1	40	**926
Jan. 12	432	11:33	2	223	17:00	3	73	7:00	1	47	††779
Jan. 13	502	11:33	2	248	16:50	3	14	1:00	1	8	772
Jan. 14	440	16:50	2	402	29:50	4	75	7:00	1	8	925
Total	2,658	73:15	2	2,085	144:75	3.67	368	31:75	1	158	5,288
Previously reported	....	....	......	....	....	......	....	....	......	2,461	100,669
Grand total	....	....	......	....	....	......	....	....	......	2,619	105,957

*Includes 5 cubic yards by hand. †Includes 7 cubic yards by hand. **Includes 3 cubic yards by hand. ††Includes 5 cubic yards by hand.

Over 100,000 cubic yards of concrete have been placed in the upper lock at Miraflores, and the most of it has been used in the floor and floor culverts, and in the east wall. The steel work for the sluice gates in the east wall is in position, and has been partly concreted in. Sections of this wall have been completed, and the foundation has been extended to within 20 feet of the lower end. Two stationary mixers set up on the east bank, and the two 2-cubic yard trestle mixers, furnish the concrete for the east wall construction. The batter section of the center wall has been extended about half the length of the lock, and the excavation for the remaining distance is well advanced. Excavation by steam shovel for the west wall continues, but no concrete has been laid as yet. Work on the west storage trestle is also in progress.

Teachers of the Colored Schools.

On Friday and Saturday of last week, January 13 and 14, an institute for the teachers of the Canal Zone colored schools was held. On the first day nearly all of the schools for colored children were closed in order to allow the teachers an opportunity to visit, in company with the supervisors, the schools for white children. The schools at Ancon, Culebra, Empire, Balboa, and Cristobal were visited to allow the teachers to observe methods and receive general instruction in classroom work. On Saturday, two all-day sessions were held in Ancon. A morning meeting beginning at 8.30 was held in Ancon hall, when there was a program consisting of papers and informal talks. The superintendent of schools, Mr. Frank A. Gause, spoke on schoolroom problems; Miss Anna Irvin on the ethical value of literature in the school; Mr. C. C. Carr, principal of the Canal Zone high school, on Panama in history; Miss Alice Alexander, supervisor of primary grades, on composition writing. The program ended with a practical talk on sanitation by Col. W. C. Gorgas.

The afternoon session was held in the Ancon schoolbuilding, when papers were read by the colored teachers, some of the subjects being the methods of teaching reading, the preparation of the reading lesson, and some difficulties in English grammar. A discussion was conducted by the superintendent of schools, and an address on the opportunity and responsibility of the teacher was delivered by the Hon. Maurice H. Thatcher. The sessions were attended by 24 men.

The organization of the schools for colored children is the same as that of the primary schools for American children. There are 15 schools, the largest of these being at Cristobal, Empire, and Culebra. The entire enrollment is approximately 1,500. There is a staff of 25 negro teachers, and a supervisor visits each school frequently. During the summer vacation, the superintendent paid a visit to Mr. J. R. Williams, inspector of schools in Kingston, Jamaica, and through his cooperation, the appointment of first-class teachers for these schools was possible. It is the policy of the department of schools to assist and raise the standard of these teachers by every means possible. To that end, arrangements are made for them to visit the schools of the white teachers, and frequent conferences are held, in addition to the monthly teachers' meetings.

Careful attention has been paid to the equipment of the schools; steel desks are furnished, and the entire working apparatus is considered up to the standard of the average school in the United States. New schoolbuildings are being constructed at Cruces, and at Pedro Miguel.

Ancon Rock Crusher.

A statement of the rock crushed at Ancon quarry during the week ending January 7, follows:

DATE.	Hours worked.	Cubic Yards.
January 2—Holiday		
January 3	9:15	2,585
January 4	9:20	2,684
January 5	9:40	2,652
January 6	8:20	2,353
January 7	11:05	4,133
Total	47:40	14,407

Red Cross Finances.

A statement of the financial condition of the Canal Zone Chapter, American National Red Cross, follows:

RECEIPTS.		
December 1. Balance on hand	$1,948.80	
December 1 to 31. Membership dues	31.00	
		$1,979.80
DISBURSEMENTS.		
December 1. Relief of man at Las Cascadas	$5.00	
December 2. Notices of election of officers, printing	2.49	
December 2. Coach hire	.20	
December 5. Relief of man at Ancon, deported to the States.	50.00	
December 13. Relief of man at Ancon Hospital, deported to the States	40.00	
December 15. Ballots for election of officers, printing	7.10	
December 17. Deportation of young lady to England	120.00	
December 19. Coach hire	.20	
December 20. Relief of lady at Pedro Miguel	50.00	
December 29. Stationery, printing	6.49	
Total disbursements		$281.48
December 31. Balance on hand		$1,698.32

JOHN L. PHILLIPS, *Treasurer*.

Approved:

C. A. DEVOL, *Chairman*.

During the year 1910, the Canal Zone Chapter paid to beneficiaries $1,925.82, including $1,200 furnished for relief of Cartago earthquake sufferers.

Obituary.

Edwin E. Frank of Memphis, Tenn., mate on pipe line dredge *No. 82*, working at Gatun, was drowned in Gatun Lake on January 12, and it is believed he committed suicide. He was 28 years of age, a native of Louisville, Ky., and had been at work in the United States dredging fleet at Memphis prior to coming to the Isthmus. He had been in the employ of the Canal Commission since March, 1910. His brother, William Frank, a dredge captain in the Atlantic fleet, and his wife living in Memphis, survive him.

Spanish War Veterans.

A communication has been received from the National Commander-in-Chief of the Spanish War Veterans stating that a delegation of national officers, headed by Past Commander-in-Chief Col. E. J. Gihon, will come to the Canal Zone after attending the memorial services to be held over the battleship *Maine* in Havana Harbor. They will arrive on the Isthmus about February 20, for the purpose of establishing four camps of Spanish War Veterans. All who are interested in this movement should communicate with Charles C. Cameron, Culebra, C. Z.

Army and Navy Union.

The officers and comrades of Garrison No. 106 of the Army and Navy Union , U. S. A., will hold a reception at Kangaroo hall, Empire, on Saturday, January 21, at 8 p. m. All members are requested to be present in uniform. A cordial invitation is extended to all veterans of the Civil War, Indian campaigns, and the Spanish-American War, who reside on the Isthmus. There will be a musical program, dancing, and light refreshments.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending January 25, 1911 (75th meridian time):

DATE.	Low.	High.	Low.	High.
	A. M.	A. M.	P. M.	P. M.
January 19	12.45	6.45	1.05	7.15
January 20	1.30	7.33	1.50	8.00
January 21	2.20	8.20	2.40	8.45
January 22	3.13	9.12	3.32	9.35
January 23	4.10	10.10	4.30	10.30
January 24	5.10	11.20	5.30	11.40
		P. M.		
January 25	6.10	12.35	6.40	......

Rainfall from January 1 to 14, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	.29	1	.33
Balboa	.28	1	.28
*Miraflores	.04	1	.04
Pedro Miguel	.03	11	.03
Rio Grande	.01	1–12	.02
Central Section—			
Culebra	.01	1–12	.02
*Camacho	0	....	0
Empire	0	....	0
Gamboa	.03	1	.05
*Juan Mina	.04	12	.04
Alhajuela	.02	‡	.04
*El Vigia	.03	12	.03
*Gorgona	.20	1	.20
San Pablo	.14	1	.17
Tabernilla	.04	1	.04
Bohio	.16	11	.23
*Monte Lirio	.42	12	.60
Atlantic Section—			
Gatun	.15	3	.58
*Brazos Brook	.19	12	.37
Cristobal	.14	‡	.55
Porto Bello	.11	5	†.24
*Nombre de Dios	.20	14	.36

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

†To 5 p. m., January 13. ‡ 11th and 12th.

CLASSIFIED EXPENDITURES.

A statement of classified expenditures of the Isthmian Canal Commission to November 30, 1910, follows:

PERIOD.	Department of Civil Administration.	Department of Sanitation.	Department of Construction and Engineering.	General Items.	Total.
Total to June 30, 1909	$3,427,090.29	$9,673,539.28	$69,622,561.42	$78,022,606.10	$160,745,797.09
Total, fiscal year 1910	709,351.37	1,803,040.95	26,300,167.05	2,863,088.83	31,675,648.20
July, 1910	58,474.88	156,006.64	2,216,849.78	280,015.85	2,711,347.15
August, 1910	63,887.05	164,220.65	2,348,777.07	336,961.35	2,913,846.12
September, 1910	60,586.46	153,433.27	2,516,814.41	236,170.76	2,967,004.90
October, 1910	37,250.26	146,587.47	2,565,042.28	295,537.33	3,044,417.34
November, 1910	71,981.80	137,912.89	2,356,292.01	233,587.25	2,799,773.95
Total	$4,428,622.11	$12,234,741.15	$107,926,504.02	$82,267,967.47	$206,857,834.75

RECORD OF CANAL WORK SINCE AMERICAN OCCUPATION.

MONTHLY TOTALS BY CUBIC YARDS OF EXCAVATION AND LOCK AND DAM CONSTRUCTION.

[*All figures are of work useful for the completed Canal.*]

DRY EXCAVATION.

CENTRAL DIVISION.

MONTHS.	CULEBRA SECTION.*							CHAGRES SECTION.**			
	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1907.	1908.	1909.	1910.
January	....	70,650	120,990	566,750	1,227,022	1,150,249	1,323,693	....	169,447	389,399	175,802
February	....	75,200	168,410	639,112	1,248,265	1,194,454	1,259,173	....	200,145	450,182	286,309
March	....	132,840	239,178	815,270	1,290,885	1,434,597	1,509,728	....	324,233	619,491	484,846
April	....	126,749	213,177	879,527	1,242,574	1,272,746	1,288,845	....	329,483	510,020	428,777
May	27,556	75,935	196,209	690,365	960,840	1,126,963	1,099,279	....	235,902	386,170	248,974
June	32,551	76,905	212,623	624,586	1,134,032	1,242,134	1,305,141	....	322,145	275,900	164,389
July	31,599	78,570	159,789	770,570	1,121,325	1,200,828	1,153,810	....	345,757	233,897	166,106
August	35,056	49,210	244,823	786,866	1,171,927	1,173,370	1,377,714	2,900	368,683	231,543	234,404
September	25,220	44,085	291,452	753,468	1,122,860	1,235,978	1,339,948	21,546	346,948	235,818	234,290
October	19,695	52,940	327,009	834,499	1,160,101	1,302,901	1,320,314	25,627	424,911	221,409	271,409
November	28,860	60,540	221,642	790,632	1,022,576	1,070,792	1,209,554	44,044	336,390	93,619	260,882
December	42,935	70,630	307,689	1,025,485	1,210,046	1,152,022	1,211,400	98,652	383,948	105,044	197,481
Totals	243,472	914,254	2,702,991	9,177,130	13,912,453	14,557,034	15,398,599	192,769	3,787,992	3,752,492	3,153,669

MONTHS.	ATLANTIC DIVISION.					PACIFIC DIVISION.					
	COLON (MINDI)†		GATUN LOCKS, DAM AND SPILLWAY.††			PEDRO MIGUEL LOCKS.‡			MIRAFLORES LOCKS, DAMS AND SPILLWAY.‡‡		
	1909.	1910.	1908.	1909.	1910.	1908.	1909.	1910.	1908.	1909.	1910.
January	45,664	....	292,155	102,690	125,011	....	83,726	27,320	7,203	61,202	31,479
February	46,046	....	282,797	95,031	123,738	....	58,242	9,486	39,046	53,689	15,300
March	70,713	....	374,598	90,051	132,007	....	95,624	6,784	73,194	51,417	18,184
April	74,368	....	373,456	70,009	103,243	....	101,365	9,129	98,943	60,060	12,148
May	71,407	....	266,747	52,786	82,958	....	57,523	10,405	73,023	47,588	20,250
June	80,101	....	244,951	36,556	88,088	13,228	70,971	8,420	68,691	55,653	21,994
July	82,378	....	213,359	39,058	95,503	22,648	77,503	4,410	104,369	50,999	11,990
August	66,249	....	188,262	40,346	99,737	22,217	58,025	12,789	94,248	35,446	17,548
September	61,437	....	145,990	49,945	103,040	28,833	48,825	10,405	90,923	31,803	8,590
October	72,643	....	154,064	57,321	118,327	48,875	39,002	7,433	74,700	25,349	9,850
November	42,009	....	118,278	63,452	94,552	55,401	20,207	10,636	52,930	18,644	9,400
December	....	....	119,904	96,590	72,030	65,578	28,342	11,195	69,650	20,083	17,906
Totals	713,015	....	2,774,561	793,835	1,238,234	256,780	739,355	128,412	846,920	511,933	194,639

*Total to January 1, 1911, 56,905,933 cubic yards.

**Total to January 1, 1911, 10,886,922 cubic yards, of which 25,932 cubic yards were removed by sluicing.

†Total to January 1, 1911, 1,476,821 cubic yards; in this total are included 172,851 cubic yards removed in 1907, and 590,955 cubic yards removed in 1908.

††Total to January 1, 1911, 6,173,437 cubic yards; in this total are included 26,628 cubic yards excavated October to December, 1906, and 1,340,179 cubic yards in 1907; there were also 38,425 cubic yards removed by dredges at Gatun Dam site in 1907.

‡Total to January 1, 1911, 1,124,547 cubic yards.

‡‡Total to January 1, 1911, 1,553,492 cubic yards; there were also 78,233 cubic yards excavated at Balboa locks and dams in 1907; and 239,891 cubic yards at different points in prism to January 1, 1911.

WET EXCAVATION.

MONTHS.	ATLANTIC DIVISION.						PACIFIC DIVISION.						
	ATLANTIC ENTRANCE.§				GATUN LOCKS.		PACIFIC ENTRANCE.§§						Miraflores Locks.§§§
	1907.	1908.	1909.	1910.	1908.	1909.	1905.	1906.	1907.	1908.	1909.	1910.	1910.
January	111,100	490,701	521,050	510,055	....	97,043	....	95,940	94,710	460,250	469,529	518,936	....
February	110,002	427,722	444,910	493,448	....	132,291	....	95,940	93,480	663,519	671,477	285,791	....
March	84,145	546,886	461,208	412,325	....	141,838	....	116,820	92,319	783,281	865,696	462,588	....
April	69,889	496,366	470,635	190,574	....	17,938	....	110,700	104,855	676,539	731,767	534,322	....
May	133,847	564,386	315,370	447,578	....	52,011	....	112,340	122,157	530,466	720,753	484,509	....
June	124,118	572,749	182,575	458,021	....	38,829	50,676	62,697	133,575	656,621	844,685	475,486	....
July	109,922	625,497	348,451	423,092	....	....	41,533	98,400	108,338	696,170	733,181	515,782	....
August	194,297	638,217	422,846	508,829	....	....	54,530	111,930	168,284	737,774	623,263	506,969	....
September	403,842	624,776	410,574	451,873	....	....	114,308	105,780	153,975	750,080	662,976	473,585	....
October	415,120	505,260	314,778	549,788	....	....	81,836	97,170	357,122	762,276	720,920	467,873	40,000
November	422,797	570,832	457,889	600,708	....	....	71,176	92,988	365,423	609,089	627,791	425,370	47,444
December	442,835	679,604	489,121	482,370	8,583	....	71,094	90,528	349,551	729,960	727,460	387,034	68,681
Totals	2,621,914	6,742,996	4,839,407	5,528,661	8,583	479,950	485,153	1,191,233	2,143,789	8,056,025	8,399,498	5,538,745	156,125

§Total to January 1, 1911, 21,160,443 cubic yards; in this total are included 399,820 cubic yards excavated in 1905, and 1,027,645 cubic yards in 1906.

§§Total to January 1, 1911, 25,814,443 cubic yards; there were also 172 cubic yards removed by steam shovels during October, 1908.

§§§Total to January 1, 1911, 465,772 cubic yards.

CONCRETE IN LOCKS AND DAMS.

MONTHS.	GATUN LOCKS.			PEDRO MIGUEL LOCKS.			MIRAFLORES LOCKS.	
	1909.	1910.	1911.	1909.	1910.	1911.	1909.	1910.
January	......	54,136	....	....	16,273	....	....	....
February	......	55,696	....	....	13,218	....	....	146
March	....	60,998	....	....	18,793	....	....	314
April	....	63,227	....	....	24,522	....	....	13
May	....	74,273	....	....	29,576	....	....	27
June	....	89,391	....	....	30,631	....	....	1,603
July	....	84,001	....	....	41,464	....	28	3 672
August	1,298	85,696	....	....	51,264	....	74	6,030
Sept	12,294	76,720	....	2,370	50,702	....	....	18,133
October	29,378	86,949	....	8,310	61,422	....	....	22,159
Nov'mber	30,270	75,152	....	10,169	64,248	....	....	23,871
December	42,832	80,212	....	13,007	42,834	....	....	21,533
Total	116,072	886,451	....	33,856	444,947	....	102	97,501

From March 17, 1909, to January 1, 1911, there were placed in the Spillway of Gatun Dam 113,869 cubic yards of concrete, including 5,597 cubic yards placed in December, 1910; in Miraflores Dam there were placed 321 cubic yards up to January 1, 1911.

FILL PLACED IN DAMS.

MONTHS.	GATUN.*		PEDRO MIGUEL.†	MIRAFLORES.‡	
	1910.		1910.	1910.	
	Wet.	Dry.	Dry.	Wet.	Dry.
January	178,254	236,994	....	....	28,151
February	292,215	271,788	11,510	....	1,438
March	210,387	332,661	22,860	....	5,385
April	242,440	263,437	31,394	....	....
May	249,283	204,275	23,572	....	6,480
June	384,166	271,283	1,350	....	7,356
July	462,092	187,713	....	....	4,290
August	406,606	235,010	....	....	10,898
September	457,637	228,638	....	....	11,220
October	480,732	259,619	....	40,000	14,370
November	129,666	266,105	....	47,444	8,960
December	243,121	169,575	....	68,681	39,224
Total	3,736,599	2,927,098	90,686	156,125	137,772

*Dry fill begun in January, 1907, and 2,096,477 cubic yards of wet, and 3,241,418 cubic yards of dry fill were placed in 1907, 1908 and 1909.

†170,166 cubic yards placed in dams up to December, 1909, inclusive.

‡207,268 cubic yards of wet fill and 511,315 cubic yards of dry fill were placed in dams up to January, 1911.

CANAL EXCAVATION TO DATE.

By French Companies		78,146,960
French excavation useful to present Canal		29,908,000
By Americans—		
Dry excavation	78,413,516	
Dredges	47,993,548	
Total		126,407,064
May 4 to December 31, 1904	243,472	
January 1 to December 31, 1905	1,799,227	
January 1 to December 31, 1906	4,948,497	
January 1 to December 31, 1907	15,765,290	
January 1 to December 31, 1908	37,116,735	
January 1 to December 31, 1909	35,096,166	
January 1 to December 31, 1910	31,437,677	

TOTALS BY DIVISIONS AND AMOUNT TO BE EXCAVATED.

DIVISIONS.	Amount excavated.		Remaining to be Excavated.	
Atlantic—				
Dry excavation	7,650,258	29,337,659	622,796	14,019,686
Dredges	21,687,401		13,396,890	
Central—				
Culebra Cut	56,905,933	67,792,855	27,280,791	29,332,163
All other points	10,886,922		2,051,372	
Pacific—				
Dry excavation	2,996,335	29,276,550	3,383,807	12,778,853
Dredges	26,280,215		9,395,046	
Grand totals		126,407,064		56,130,702

LUBRICATING OIL.

Consumption at Electric and Compressor Plants Shows a Reduction.

The report of the use of lubricating oil in the electric and air compressor plants during the month of November shows a marked advance in economy in the use of oil in these plants, and a favorable record as compared with lubrication of similar plants in the States.

In the air compressor plants at Rio Grande, Empire and Las Cascadas there are 14 compressors; rated horsepower of each compressor, 425; steam pressure, 125 pounds, steam end of engines, double cylinder, simple; air end, double cylinder, cross compound; area of two steam cylinders, 9.42 square feet; area of high pressure air cylinders, 9.42 square feet; area of low pressure cylinders, 15.17 square feet; speed of compressors, from 127 to 137 revolutions per minute. All engines are equipped with individual lubricators on steam cylinders, and on each valve on the air end. The return oiling system is in use on all bearings, and engine oil is filtered before returning to the supply or pressure tank. The reports for each plant show:

Rio Grande—Valve oil used, 27¼ gallons; revolutions per gallon, 275,332; square feet of area rubbed over per pint of oil, 1,296,752. Air compressor oil used, 37 gallons; revolutions per gallon of air compressor oil, 202,770; square feet of area rubbed over per pint of oil, 1,246,516. Stationary engine oil used, 33¾ gallons; revolutions per gallon of stationary engine oil, 222,481. Plant of five compressors runs 10½ hours per day, except Sunday.

Empire—Valve oil used, 71 3-10 gallons; revolutions per gallon of valve oil, 256,577; square feet of area rubbed over per pint of valve oil, 1,208,492. Air compressor oil used, 73½ gallons; revolutions per gallon of air compressor oil, 248,723; square feet of area rubbed over per pint of air compressor oil, 1,529,064. Stationary engine oil used, 84½ gallons; revolutions per gallon of oil, 216,346. Plant of five compressors runs 22½ hours per day.

Las Cascadas—Valve oil used, 25 gallons; revolutions per gallon of valve oil, 256,732; square feet of area rubbed over per pint, 1,209,188. Air compressor oil used, 28 gallons; revolutions per gallon, 229,224; square feet of area rubbed over per pint of oil, 1,409,154. Stationary engine oil used, 40 gallons; revolutions per gallon, 160,456. Plant of four compressors runs 10½ hours per day, except Sunday.

The consumption of oil at Balboa and Empire electric plants was: Balboa—Valve oil, 33 gallons; stationary engine oil, 20 gallons; air compressor oil, 10 gallons. Empire—Valve oil, 17 gallons; stationary engine oil, 15 gallons.

Accidents at Toro Point.

A premature explosion of dynamite occurred at the quarry on Toro Point about 3 o'clock on Tuesday afternoon, January 10, causing injuries to four West Indian workmen, which resulted fatally in the cases of A. Bowman, check No. 31563, and John Aaron, check No. 107621, after their removal to Colon Hospital. The men were tamping a charge of 30 pounds of explosive when the loading stick they were using broke. Another one was substituted, leaving a part of the broken stick in the hole, and the two pieces of wood scraping against each other and the dynamite, is believed to have caused the latter to ignite. The powder foreman noticed the odor, called a warning, and ran, reaching a point about 20 feet distant from the spot, but the dynamite exploded before workmen could reach a place of safety.

Gordon Grant, a West Indian, check No. 48040, employed on a construction train at Toro Point, was caught between a car and a pile driver on the breakwater trestle on Wednesday, January 11, and almost instantly killed.

Unloading Record in Pedro Miguel District.

On January 7, six unloaders, working in the Pedro Miguel district of the Central Division, unloaded 80 Lidgerwood trains, and, in addition, there were unloaded seven Western dump trains, containing a total of 32,850 cubic yards of rock and earth. The Lidgerwood trains were composed of 20 cars, each car containing 19 cubic yards of material, the Western dump trains being composed of 35 cars, each car containing 10 cubic yards. The material contained in these cars was wasted on the Miraflores and Balboa dumps.

Record Excavation in Culebra District.

On January 11, eighteen steam shovels of the 200-ton class, working in the Culebra construction district of the Central Division, excavated 36,009 cubic yards of rock and earth, or an average of 2,000½ cubic yards per shovel, for the working day of eight hours. The shovels were under steam 144 hours, were actually at work 109 hours and 15 minutes, were delayed 23 hours and 10 minutes waiting for cars, the other delays being on account of mining, cleaning track, repairing shovel, moving back, etc. This is the highest yardage ever excavated in any district of the Central Division, in one day.

On January 5, twenty steam shovels of the 200-ton class, working in the Culebra construction district, excavated 34,985 cubic yards of material in the 8-hour working day, or an average of 1,749 cubic yards per shovel, for the day. The shovels were under steam 160 hours, were actually working 112 hours, the principal delay being on account of waiting for cars, amounting to 37 hours and 5 minutes. The other delays were on account of mining, cleaning track, repairing shovel, moving back, etc.

On January 3, twenty shovels, working in the Culebra construction district, excavated 33,099 cubic yards of rock and earth in the working day of eight hours. The shovels were under steam 160 hours, and were actually at work 113 hours and 25 minutes, waiting for cars 35 hours and 20 minutes, the rest of the time being lost in mining, cleaning track, repairing shovels, moving back, etc. The average per shovel, per day, was 1,655 cubic yards.

Porto Bello Crusher.

A statement of the work done at the Porto Bello crusher, by days, for the week ending January 14, follows:

DATE.	Hours worked.	Cubic Yards.
January 9	5:50	1,739
January 10	9:03	3,362
January 11	9:08	3,549
January 12	6:59	2,550
January 13	8:42	3,829
January 14	7:46	3,049
Total	47:28	18,078

Bids for Lease of Buildings.

Bids will be received by the Collector of Revenues up to and including January 25, 1911, for the leasing to the highest bidder, from February 1, 1911, for a period of not more than three years, of building No. 30 at Paraiso, owned by the Canal Zone Government. The building is of French construction, one story, contains two rooms, and one oven. Bids should be enclosed in envelopes addressed to the Collector of Revenues, marked "Bids for a lease to Building No. 30 at Paraiso." TOM M. COOKE, *Collector of Revenues.*

Bids will be received by the Collector of Revenues, up to and including January 25, 1911, for the leasing to the highest bidder, from February 1, 1911, for a period of not more then three years, of building No. 16 at Empire, owned by the Canal Zone Government. The building is of French construction, two stories, and contains, in all, 12 rooms. Bids should be in envelopes marked "Bids for a lease to Building No. 16 at Empire."

TOM M. COOKE, *Collector of Revenues.*

LABOR FORCE AND QUARTERS IN DECEMBER.

On December 28, there were 35,132 employes actually at work on the Canal and the Panama railroad, and of that number, 29,088 were Canal employes. The gold force on the Canal work, composed almost entirely of white Americans, was 4,705.

The report of the Chief Quartermaster for December shows that the number of family quarters occupied by "gold" employes was 1,740, which is three more than in November, and the occupants numbered 5,551, an increase of 121. Of this number, 1,878 were women, and 1,841 children. Bachelor quarters occupied by "gold" employes numbered 2,021, and the occupants numbered 3,418, of whom 196 were women. The family quarters occupied by European laborers numbered 282, and the occupants, 916; bachelor quarters, 108, and the number of occupants, 5,310. The family quarters occupied by West Indians numbered 1,061, and the occupants, 4,490; bachelor quarters, 252, and the number of occupants, 4,700. A statement of the force actually at work on December 28, follows:

DEPARTMENT.	SILVER EMPLOYES.													Total Silver.	Total Gold.	Grand Total.
		Artisans.					European Laborers.		West Indian Laborers.							
	Monthly.	44 cents.	32 cents.	25 cents.	20 cents.	16 cents.	20cents.	16 cents.	20 cents.	16 cents.	13 cents.	10 cents.	7 cents.			
Const'ct'n and Eng'r'ng.	4,390	16	22	259	662	2,578	3,128	1,418	112	541	3,217	3,363	256	19,962	3,569	23,531
Civil Administration	184	..	..	2	4	18	......	......	...	.....	......	5	....	213	348	561
Sanitation	666	..	..	2	3	4	1	1	...	.....	3	349	8	1,037	389	1,426
Quartermaster's	956	1	..	84	168	87	182	21	23	.....	9	978	13	2,522	218	2,740
Subsistence	635	..	..	1	1	......	......	......	...	.....	......	......	....	637	54	691
Disbursements	7	..	..	....	.....	......	......	......	...	.....	......	......	....	7	26	33
Examinat'n of Accounts.	5	..	..	....	.....	......	......	......	...	.....	......	......	....	5	101	106
Total	6,843	17	22	348	838	2,687	3,311	1,440	135	541	3,229	4,695	277	24,383	4,705	29,088

Panama railroad force, 3,426; Panama railroad relocation force, 1,576; Panama railroad commissary force, 1,042. Total, 6,044. I. C. C. force, 29,088. Grand total, 35,132.

SOCIAL LIFE OF THE ZONE.

Miscellaneous Events.

The annual meeting of the Grand International Auxiliary, B. of L. E., Las Cascadas, was held in the lodge hall on Friday afternoon, January 13. Following the business meeting, the members adjourned to the home of Mrs. Charles R. Lingo, where a social hour was spent, refreshments being served. The order was organized in 1909, and has a membership of 47. Mrs. C. R. Lingo is a secretary of the B. of L. E. journal.

There will be a meeting at the Gorgona lodge hall on Sunday afternoon, January 22, at 2 o'clock, for the purpose of preparing the petition for the charter for a Canal Zone chapter of the Order of the Eastern Star. It is desired that all those who have expressed their intention of joining the chapter should be present at the meeting. The number of signatures already secured is more than 50.

The Las Cascadas Dancing Club is an organization recently formed in Las Cascadas. Dances are held on the second and fourth Thursday evenings in each month. Special trains will be run for any dance upon request of a club, or a sufficient number of persons to warrant the expense. The club has a membership of 55.

The Army and Navy Union will hold an entertainment and dance at the lodge hall, Empire, on Saturday evening, January 21.

Cristobal Dancing Club.

The first of a series of monthly dances by the newly organized Cristobal Dancing Club was given at the Cristobal clubhouse on the evening of January 14. The club is composed of the younger element of Cristobal, the board of governors being: President, L. E. Burdge; vice-president, W. H. Marsh; secretary and treasurer, W. T. Sexton; other members, E. E. Rigney and G. K. Weston. The next dance will be held on February 11.

Church Notes.

A meeting of the Isthmian Ministers' Association will be held in the Methodist College, Panama, on Monday, February 6, at 3 o'clock. The president, the Rev. W. W. Gray will preside, and an address will be made by the Hon. Maurice H. Thatcher. The Rev. S. Moss Loveridge of Culebra is vice-president of the association; the Rev. A. A. Nellis of Culebra, secretary, and the Rev. E. J. Cooke of Colon, treasurer.

At the meeting of the Isthmian Sunday School Association held at Gorgona on Sunday, January 8, the following officers were elected for the ensuing year: President, Rev. A. A. Nellis; vice-president, H. L. Stuntz; secretary, E. J. Putnam; treasurer, Judge J. B. Marsh. An address by H. L. Stuntz on Sunday school work in the Canal Zone was followed by a discussion. It was suggested that an appeal be made to enlist the sympathy and cooperation of the various chaplains in the Commission service in Sunday school work. The association is planning an outing for the pupils of the federated Sunday schools to be held some time in the dry season.

On Wednesday evening, January 11, the Woman's Altar Guild of Trinity Church, Culebra, held a musicale at the home of Colonel and Mrs. D. D. Gaillard. Those who assisted in the program were: Mrs. T. C. Dickson, Mrs. A. O. Ludwig, Mrs. Adolf Faure, Mrs. Nelson Jacobs, and Mr. A. B. Dickson. Souvenir programs were presented to the 50 guests present.

The Woman's Altar Guild of St. Luke's Church, Ancon, will hold a reception in honor of Bishop Albion W. Knight at the residence of Major and Mrs. Henry A. Brown on Saturday evening, January 21, from 8.30 to 10 o'clock. All members of the congregation, and residents of Ancon, are invited to attend.

A Masonic service will be held at the lodge hall, Paraiso, on Wednesday evening, January 18. The Rev. A. A. Nellis is the chaplain in charge.

Colon Humane Society's Christmas Treat.

The cash contributions for the Christmas tree and entertainment given the poor children of Colon, under the direction of the Humane Society, on the afternoon of December 24, amounted to $362.25. The disbursements aggregated $297.22, leaving an unexpended balance of $65.03.

Boy Scouts in the Canal Zone.

An organization of boy scouts has been effected in Gorgona, with 16 American boys between the ages of six and 16 as members. There is a scout council, composed of T. S. Booz, W. H. Stevens, Harry Otis, Samuel Paulus and Jess T. Hopkins, scout master. The boys are divided into two patrols called the hounds and the horses. Melville Booz is leader of the former, and Harry Otis of the latter patrol. There are two corporals, Eddie Otis and Hartman Stevens. The organization of the Boy Scouts of America is followed in the local organization, and the official handbook, by Lieut.-Gen. Sir Robert Baden-Powell, and Ernest Seton Thompson, is used as the authority. The boys pass an examination in this text book for entrance as tenderfeet, and work from that to second, and then to first class scouts, by examinations and tests. The field activities are somewhat limited, owing to conditions, but several trips have been made into the jungle, when one patrol in advance has marked out the trail by scout signs for the others to follow. Trips for observation are also made. The boys make reports of these trips at their weekly meetings, held in the clubhouse, and points are given according to the number of animals sighted and correctly reported. The scout uniform is khaki shirt and trousers, tan shoes and canvas leggings, and a wide brimmed felt hat. The corporals wear a white V on the left sleeve. The scouts have a patrol pennant, and the American flag is used as their standard.

PERSONAL.

Lieut-Col. Wm. L. Sibert and family, and Capt. F. W. Altstaetter, Corps of Engineers, are on the *Ancon*, which left New York on January 12, and is due to arrive at Cristobal on January 18.

Major Smedley D. Butler, U. S. Marine Corps, in command at Camp Elliott, returned to the Isthmus on the *Alliança*, which arrived at Cristobal on the 16th.

Anti-Cigarette League.

The meetings of the two sections of the Boys' Anti-Cigarette League of Gorgona continue to be held with the usual number present. In the absence of Mrs. A. L. Hackenberg, director of section No. 1, the meetings are held under the direction of her daughter, Miss Ruth Hackenberg. Section No. 2 held a Christmas party in December, and a magic lantern show was the feature of the meeting held in Christmas week. The membership of this section has increased to 13.

An anti-cigarette league was organized at Gatun on January 11, by Mrs. March from Gorgona. Twelve boys enrolled.

A delegation of members of the Association of Mexican Engineers contemplates a visit to the Canal work in the near future. It is expected that about 50 persons, including the Hon. Leandro Fernandez, Minister of Communication and Public Works of Mexico, will make up the delegation.

Alumni and former students of the Pennsylvania State College, now on the Isthmus, are invited to be present at a reception and smoker at the Hotel Tivoli on Saturday evening, January 21.

At a meeting of Gatun Court, No. 6, I. O. P. K., resolutions of sympathy were passed on the deaths of W. H. H. Brady and J. S. Dabbs, Jr.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band, at Gatun, C. Z., on Sunday, January 22, 1911, at 2 p. m. The program follows:

1	March—*Niebelungen*	Moses
2	Selection—*Madame Sherry*	Hoschna
3	Flower Song—*Hearts and Flowers*	Tobani
4	Overture—*Stradella*	Flotow
5	Medley Selection—*My Southern Rose*	Von Tilzer
6	Waltz—*Wedding of the Winds*	Hall
7	*Procrastination Rag*	Cobb
8	Selection—*Carmen*	Bizet
9	March—*New Colonial*	Hall

Chas. E. Jennings, *Musical Director.*

The next concert will be given at Empire on Sunday, January 29, at 6 p. m.

PANAMA RAILROAD COMPANY.

Schedule for Balboa Trains—Effective January 2, 1911.

SOUTHWARD.										STATIONS.	NORTHWARD.									
Sundays only.	Worknights only.	DAILY.									DAILY.								Worknights only.	Sundays only.
69	67	65	63	61	59	57	55	53	51		50	52	54	56	58	60	62	64	66	68
P. M.	P. M.	P. M.	P. M.	P. M.	P. M.	A. M.	A. M.	A. M.	A. M.	Leave Arrive	A. M.	A. M.	A. M.	A. M.	P. M.	P. M.	P. M.	P. M.	P. M.	P. M.
9.30	10.50	6.45	5.35	1.50	12.30	10.40	7.45	6.35	5.30	Panama	6.20	7.40	10.30	11.25	1.25	5.25	6.15	7.35	11.25	10.00
9.45	11.00	6.55	5.50	2.00	12.45	10.50	8.00	6.50	5.45	Balboa	6.05	7.25	10.20	11.10	1.15	5.10	6.00	7.25	11.10	9.50
										Arrive Leave										

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

Culebra won three bowling games from Gorgona on Saturday night, January 13, as follows:

Culebra.				Gorgona.			
Herrington..	175	199	162	Halderman	154	118	151
Fleischman..	152	173	149	Otis......	153	177	153
Huttlemeier.	186	156	140	White.....	192	162	139
Mengel.....	170	161	185	Bordt.....	139	161	200
Case.......	174	184	167	Varenkamp	150	130	134
Total.....	857	873	803	Total...	788	748	777

High scores in duckpins during the week were made by Dakin, 104; Case, 102; bigpins, Mengel 200; Case, 201 twice.

The standing in the chess tournament is as follows:

Name.	Won.	Lost.	Name.	Won.	Lost.
Bayne......	5	5	Hepler.....	6	4
Case.......	6	3	Silver......	4	9
Conlan.....	6	3	Soderberg...	5	4
Dubois.....	2	8	Thomson...	5	5
French.....	7	3	Clark......	2	8
Hall........	5	5			

A simultaneous chess tournament will be held on the night of January 27, when Mr. Dubois will play all comers.

The next in the series of informal "socials" will be held at the clubhouse on Friday evening, January 20, at 8 o'clock. A splendid program has been arranged for the enjoyment of every family and bachelor in Culebra. The Hon. Maurice H. Thatcher will take part in the program. An opportunity will be given at the close of the program to become personally acquainted with Mr. and Mrs. Thatcher.

The organization of the topic club has been completed, and the first session will he held on Wednesday evening. The leader of the first three sessions will be H. F. French. The topic to be discussed is "Choosing a vocation for life."

The glee club concert announced in the last issue will be held on February 2, instead of February 22.

EMPIRE.

Last Saturday night, DePoorter of Gatun defeated Hirsh of Empire at pool by a score of 150 to 85. Hirsh will challenge DePoorter again during the next two months.

At the literary society meeting held on the 13th, the debate, "Resolved that recent political events indicate an early dissolution of the two great political parties," was won by the negative.

Six teams are entered in the local bowling league.

At the meeting of the literary society on the 20th, there will be a discussion on "Home reading." The discussion will be led by Mark Hall.

Gray's orchestra of Colon presented an attractive program before a good-sized audience on Monday evening, January 16.

The next moving picture entertainment will be on Thursday evening, January 19.

Physical Director Warr sailed for the Isthmus on the 16th. Immediately upon his return, he will make plans for reopening the gymnasium classes.

"Men of steel" is the title of a course in Bible study to be opened on Sunday morning, January 22, at 9 o'clock. The course will be taught by the secretary of the clubhouse.

The clubhouse has purchased a small phonograph for use during such times as the Victrola is being repaired.

GORGONA.

A new beginners' class in Spanish will be formed on Thursday night, January 19, at 7 p. m. The intermediate class will meet from 8 to 9 p. m., Monday and Thursday; the beginners' class from 7 to 8, Monday and Thursday; the advanced class, Tuesday and Thursday from 7.15 to 8 p.m. A class will be formed for men and women who want to learn the language.

A moving picture show will be held Friday, January 20, in the game room at 8.15 p. m. Admission 25 cents; members free.

The discussion club will hold an open meeting for men and women on Wednesday night at 7.30 p. m. The discussion will be "Should women vote." Mr. Bennick of Corozal will lead.

The lecture by Mr. Frank E. Jackson on the "Princes and ruling chiefs and their palaces in India," was well attended. The pictures shown were taken by Mr. Jackson during a four year stay in India.

E. C. Soule of Gatun will give an address on "Universal peace" at the monthly song service on January 22, at 8.15 p. m. Admission is free.

GATUN.

There will be a meeting of the citizens of Gatun at the clubhouse on Saturday night, January 21, at 8 o'clock, to consider the proposition of providing a playground and athletic field in Gatun. The various organizations, clubs, and fraternal societies are invited to send representatives.

The membership committee has decided to continue its weekly meetings until after the campaign closes on February 1, when its meetings will be held bimonthly.

Three new members were added to the glee club, and two new members were added to the mechanical drawing class, during the past week.

Messrs. Huber, Wilson, Phillips, Purdy, Collier, and McHie are especially interested in wrestling. There will be some interesting bouts in the near future.

In the two-man duckpin tournament, the teams having a score of 550, and over, are as follows: DePoorter and Barte, 569; Bull and Barte, 569; Durand and DeMoll, 564, Duryea and Barte, 561; C. R. Harrington and DeMoll, 555; Luckey and Barte, 551; Severn and Barte, 550; Dillon and Barte, 555.

Ten sets of Staunton chessmen recently ordered from the States have arrived and a tournament will be started this week.

CRISTOBAL.

An effort will be made by the membership committee of the Cristobal association to increase the membership to 450. The men who enjoy bowling are especially interested in this movement, for the reason that two additional alleys will be authorized for the Cristobal association, when the membership passes the 450 mark.

The glee club of the Cristobal association, under the leadership of A. B. Dickson, meets every Tuesday at 8 p. m. The average attendance has been about 18, but there is room for more voices.

On Thursday evening, January 19, there will be a meeting of all those interested in the field and track meet which will be held at Empire on February 22. All interested in athletics should be present at this meeting.

Cristobal bowlers won two out of three games from the Gatun team on Saturday night, January 14. Following are the scores:

Cristobal.				Gatun.			
Barrett.....	211	198	171	Severn....	188	190	146
Blackburn...	170	163	173	Wolf......	145	176	187
Burns......	184	159	135	DeMoll...	184	151	177
Bullard.....	158	160	188	Harrington	137	173	153
Thomas.....	161	160	186	Barte.....	215	208	175
Total.....	884	840	853	Total...	869	898	838

PORTO BELLO.

Thursday night, a class was started in the study of "Life problems." The discussion was on "The value of work," and "The choice of a life work." The attendance was 33.

Anchorage posts have been driven on each side of the dock at the clubhouse. Ropes and pulleys have been supplied for the use of those who own a boat or cayuco.

A. C. Cornelison has been appointed to fill a vacancy on the local council.

For two months and a half, the Sunday evening song service has been a feature at the clubhouse. Thirty-five people attended last Sunday.

OFFICIAL CIRCULARS.

Restriction on Use of Water.

CULEBRA, C. Z., January 14, 1911.

CIRCULAR No. 365:

A necessity exists for restricting the use of water from the Camacho, Rio Grande and Cocoli reservoirs during the dry season.

The use of garden or other hose for watering plants and flowers is prohibited except by authorized gardeners and employes of the Quartermaster's Department.

District quartermasters are directed to report all leaks in faucets or pipes, and all violations of this order.

GEO. W. GOETHALS,
Chairman.

Sale or Transfer of Commissary and Hotel Books.

CULEBRA, C. Z., May, 17, 1907.

CIRCULAR No. 122, (Republished):

The transfer of commissary and hotel books issued by the Isthmian Canal Commission for the benefit of its employes, or the sale or other disposal of same is strictly prohibited. Any violation of this order should be reported to the Chairman, and will be considered cause for the employe's discharge.

GEO. W. GOETHALS, *Chairman.*

Auction Sale of Dairy Cows.

The auction sale of dairy cows which was to be held on January 18, at the Ancon Hospital dairy, has been postponed until Saturday, January 21, at 2 p. m., and will take place at the Ancon corral.

Sale of Animals at Public Auction.

There will be sold at public auction by the district quartermaster at Ancon, C. Z., at the old corral, at 2 p. m., Saturday, January 21, 1911, to the highest bidder for cash, the following Isthmian Canal Commission property:

Fifteen (15) mules, American; one (1) pony, native.

The Government reserves the right to accept or reject any or all bids. For further information apply to district quartermaster, Ancon C. Z.

C. A. DEVOL, *Chief Quartermaster.*

BASEBALL.

PANAMA CANAL LEAGUE.

RESULTS OF GAMES, JANUARY 15.

At Ancon— Gorgona, 5; Ancon, 6.
At Empire—Atlantics, 2; Empire, 4.
At Colon— Marines, 1; Commissary-Subsistence, 4.

STANDING OF CLUBS.

	P.	W.	L.	P.C.		P.	W.	L.	P.C.
Com-Sub.	4	4	0	1.000	Gorgona.	4	2	2	.500
Ancon...	4	3	1	.750	Atlantics	4	0	4	.000
Empire..	4	3	1	.750	Marines.	4	0	4	.000

SCHEDULE FOR JANUARY 22.

At Ancon— Marines vs. Atlantics.
At Empire—Empire vs. Ancon.
At Colon— Commissary-Subsistence vs. Gorgona.

SUMMARIES OF GAMES JANUARY 15.

C.-S.	AB.	H.	PO.	A.	E.	Marines.	AB.	H.	PO.	A.	E.
Sullivan,3b.	5	1	3	1	0	McCabe,c..	4	0	6	3	0
Breiv'gle,2b	5	1	3	0	0	Maguire,1b.	4	1	10	0	0
Curtis,ss...	5	2	1	1	0	Shepard,2b.	3	0	4	4	2
Mosher,1b.	5	1	7	0	1	Guskie,ss...	4	0	2	2	3
Kellogg,p..	3	1	1	6	1	Kenyon,rf..	4	0	1	0	0
Guptil,cf...	4	1	0	0	0	Field,3b....	2	0	0	3	1
Coffin,rf...	4	1	0	0	0	Burns, lf...	2	0	2	0	0
Hodnett,c..	4	1	12	2	2	Austin,cf...	2	0	0	0	0
Beard,lf...	4	1	0	0	0	Buckley,p..	3	0	1	1	0
Totals...	39	10	27	10	4	Totals...	28	1	*26	13	6

Com.-Subsistence...	0	2	1	0	0	0	0	1	0—4
Marines...........	0	0	0	0	1	0	0	0	0—1

*Hodnett hit by batted ball.

Runs—C.-S.: Curtis, Mosher, Coffin, Hodnett; Marines: Field. Two base hit—Mosher. Sacrifice hits—Kellogg, Burns. Passed ball—Hodnett. Stolen bases—Sullivan, Curtis, Coffin. Bases on balls—Off Kellogg, 2. Struck out—By Kellogg, 13; by Buckley, 3. Hit by pitcher—By Kellogg, 1. First base on errors—C.-S., 5; Marines, 3. Left on bases—C.-S., 9; Marines, 5. Double plays—Breivogle to Mosher; Maguire, unassisted. Umpire—Irwin. Time of game—1.55. Scorer—J. P. Mead.

Atlantics	AB.	H.	PO.	A.	E.	Empire	AB.	H.	PO.	A.	E.
Hennessy,ss	3	0	1	1	1	Bryan,3b...	4	0	0	2	1
Gamble,1b.	4	1	0	1	2	Markley, 2b	4	3	1	1	0
Herring,3b.	4	0	2	0	0	Fluharty,rf.	3	0	1	0	0
Edwards,2b	4	0	1	1	0	Bell,1b.....	3	0	6	2	1
Osborne,rf.	4	1	3	0	0	Toone,ss...	4	1	2	0	0
Thompson,c	4	1	3	2	0	VanZant,lf.	3	0	0	0	0
Sullivan,cf.	3	0	3	0	0	Marshall,cf.	1	0	0	0	0
Kaufman,lf	2	1	2	0	0	Murphy,cf..	2	1	2	0	0
Johnston,p.	2	1	0	2	0	Lyons,c....	0	0	14	0	1
Davis,p....	1	0	0	1	0	Junger,p...	2	0	1	0	0
						Barnes,p...	1	0	0	0	0
Totals...	31	5	24	8	3	Totals...	27	5	27	5	3

Atlantics..........	0	0	0	0	0	1	1	0	0—2
Empire............	0	0	0	2	1	1	0	0	x—4

Runs—Atlantics: Thompson, Kaufman; Empire: Markley(2), Fluharty, Murphy. Runs earned—Empire, 2. Two base hits—Murphy, Markley. Three base hit—Kaufman. Sacrifice hits—Sullivan, Fluharty, Bell, Lyons (2). Stolen bases—Hennessy, Gamble, Markley (2), Lyons. Bases on balls—Off Davis, 1; off Barnes, 1; off Junger, 1. Struck out—By Johnston, 2; by Davis, 2; by Junger, 8; by Barnes, 5. Left on bases—Atlantics, 5; Empire, 4. Umpire—Lawler. Time of game—2.05. Scorer—Moeller. Attendance—250.

Ancon.	AB.	H.	PO.	A.	E.	Gorgona.	AB.	H.	PO.	A.	E.
RDren'an,cf	5	0	2	0	0	Briggs,3b...	5	1	3	1	0
LDren'an,rf	4	1	1	1	0	Ridge,rf....	5	1	1	0	1
Tinsley,ss..	4	1	3	0	0	Barney,c...	4	1	7	1	1
Smith,2b,c.	4	0	3	2	2	Wright,1b..	4	0	8	0	0
Potter,2b,3b	4	3	1	1	0	Clement,ss.	3	0	5	4	2
Caldwell,c.	3	1	4	0	0	Emery,lf...	4	1	1	0	0
Pearman,3b	1	0	1	0	0	Fullerton,2b	4	1	0	0	0
Nygren,1b,.	3	0	9	0	0	Calvert,cf..	4	0	2	0	0
James,ss...	4	0	1	4	0	Tretter,p...	4	3	0	2	1
Murray, p,.	4	1	2	4	0						
Totals...	36	7	27	12	2	Totals...	37	8	27	8	5

Ancon.............	1	0	0	0	5	0	0	0	0—6
Gorgona...........	0	0	4	0	0	1	0	0	0—5

Runs—Ancon: R. Drennan, L. Drennan (2), Nygren, James, Murray; Gorgona: Briggs, Ridge, Wright, Clement, Tretter. Runs earned—Ancon, 1; Gorgona, 1. Two base hit—Potter. Home run—Tretter. Sacrifice hits—Smith, Nygren, Barney. Sacrifice fly—Emery. Stolen bases—Barney, Clement, Wright, James. Bases on balls—Off Murray, 2. Struck out—By Tretter, 7; by Murray, 5. Hit by pitcher—By Murray, 1; by Tretter, 1. Left on bases—Ancon, 2; Gorgona, 6. Double play—Murray to Pearman. Wild pitch—Tretter. Passed ball—Barney. First base on errors—Gorgona, 3; Ancon, 1. Umpire—Freel. Time of game—2.00. Scorer—B. W. Payne.

Sale of Horse at Public Auction

There will be sold at public auction by the Administrator of Estates at the corral in Culebra, C. Z., at 1 p. m., on Monday, January 23, 1911, to the highest bidder for cash, the following property belonging to the estate of the late Willis S. Holstead:

One (1) horse, age 2½ years, 14 hands high, weight about 900 pounds, with white star in forehead.

The Administrator of Estates reserves the right to reject any or all bids. For further information apply to Administrator of Estates, Ancon, C. Z.

TOM M. COOKE, *Administrator of Estates*

COMMISSARY DEPARTMENT.

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning January 16.

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	6
Shoulder, neck trimmed off, (4 lbs. and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg, (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing, per pound	8
Shoulder for roasting (not under 4 pounds), per pound	14
Loin for roasting, per pound	19
Chops, per pound	24
Cutlets, per pound	28
Pork cuts, per pound	*16
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	9
Corned, per pound	12, 14, 16
Chuck roast, (3 pounds and over), per pound	13
Pot roast, per pound	15
Rib roast, second cut (not under 3½ pounds), per pound	18
Rib roast, first cut (not under 3 pounds), per pound	20
Sirloin roast, per pound	21
Rump roast, per pound	21
Porterhouse roast, per pound	21
Steak, Chuck, per pound	14
Round, per pound	15
Rib, per pound	20
Sirloin, per pound	21
Porterhouse, per pound	21
Rump, per pound	21
Tenderloin, per pound	24

MISCELLANEOUS.

Livers—Beef, per pound	10
Calf, each	60
Half, each	30
Sausage—Pork, per pound	17
Bologna, per pound	12
Frankfurter, per pound	14
Leberwurst, per pound	13
Sweet bread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	40
½ dozen only	26
Bluefish, fresh, per pound	16
Cod, fresh, per pound	10
Halibut, fresh, per pound	15
Oysters, in 1-qt. kegs, keg	50

POULTRY AND GAME.

Chickens—Fancy roasting, large, each	1.50
medium, each	1.30
Fowls, each	70, 82, 93, 1.04, 1 15
Ducks, large, each	1 50
medium, each	1 30
Broilers, each	75
Turkeys, per pound	30
Squabs, each	35
Capons, each	2.60
Pheasants, each	70, 1.00
Partridges, each	50
Grouse, each	85

CURED AND PICKLED MEATS.

Ham—English York Cut, per pound	30
German, Westphalia, per pound	36
Sugar cured, per pound	20
Sliced, per pound	23
Half, for boiling, per pound	21
Boiled, per pound	25
Hocks, per pound	‡08
Bacon—Breakfast, whole piece, per pound	27
Breakfast, sliced, per pound	28
Beef, salt, family, per pound	9½
Pork, salt, family, per pound	14
Ox tongues, each	80
Pigs' feet, per pound	10
Tongues, per pound	16
Mutton, mess, per pound	7

DAIRY PRODUCTS.

Butter—Creamery special, per pound	40
Cheese—Roquefort, per pound	38
Philadelphia Cream, cake	10
Young America, per pound	22
Swiss, per pound	26
Edam, each	1.00
Camembert, in large tins, tin	38
Camembert, in small tins, tin	14
Neufchatel, each	6
Gouda, per pound	34
Milk, Briarcliff, bottle	**25
Buttermilk, bottle	**15

	Price.
Ice cream, quart	‡25
Ice cream, ½-gallon	‡50

VEGETABLES AND FRUITS.

Beets, per pound	3
Celery, per head	6
Carrots, per pound	3
Cabbage, per pound	3
Cucumbers, per pound	10
Lettuce, per pound	*15
½ pound	*8
Onions, per pound	3
Potatoes, white, per pound	3
Sweet, per pound	2½
Squash, per pound	4
Turnips, per pound	3
Yams, per pound	3½
Apples, per pound	5
Cranberries, per pound	10
Grapefruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12

*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal and Colon during the week ending January 14, 1911:

Haakon VII, January 9, from Jacksonville, with 1,583,000 feet yellow pine lumber for Mechanical Division.

Cristobal, January 10, from New York, with 24, 925 barrels cement for Atlantic Division; 116,300 bags cement for Pacific Division.

Panama, Janauary 11, from New York, with 10 pieces steel plate for Atlantic Division; 19 packages drill outfits for Pacific Division; 578 pieces malleable iron castings,7 cases machinery for Mechanical Division; 33 cases drugs and sundries, 43 barrels alcohol for Sanitary Department; 32 crates iron pails, 20 bundles galvanized anchor rods, 10 barrels iron anchors, 10 cases paint, 10 iron water gates, 14 cases railroad torpedoes, 10 packages lubricators for stock; and a miscellaneous cargo, the whole consisting of 897 packages, weighing 93 tons.

Atenas, January 12, from New Orleans, with 248 pieces washers, 2 barrels washers, for Atlantic Division; 44 cases castings for Mechanical Division; 250 crates fire brick, 20 pieces rail benders, 84 packages push carts for stock.

Zacapa, January 12, from New York, with 25 tons lock construction material for Atlantic Division: 315 coils rope, 40 bundles brooms, 24 cases tape fuse for stock.

Misdirected Letters.

Ancon, C. Z., January 14, 1911.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received in the office of the Director of Posts, and may be secured upon request of the addressee:

Ayers, Mrs. Francis
Beam, Mrs. M. T., care Irwin Beam
Bentley, L. E. (registered)
Bowles, James T. (j)
Bucker, Miss A.
Cleveland, Geo. F.
Costin, H. S.
Evans, Robert E.
Gabriel, Harry
Huff, W.
Jay, W. C.
Johnson, J. J.
Kemp, Louis
Kirkpatrick, Mrs. Ralph
Kotisnaki, Athnasios
Kummers, Adolph P.
Lindon, Miss E. M.
Mansion, George
Marrell, George
Miller, A.
Morris, Harry
Nigg, Mrs. A.
Peak, A. F.
Peak, Frank
Perry, Robert E.
Pfeoffer, Adolph
Pflusterer, Capt. Aug.
Pyne, David F.
Reese, Evan
Riley, J.
Rogers, Mason T.
Rogers, Samuel
Stewart, V. A.
Schneider, G. E.
Vreeland, H. J.
Wade, William
Watson, James
Wilson, Geo. M.(registered)

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, January 14, 1911. All heights are in feet above mean sea level.

Day and Date	Station.				
	Vigia.	Alhajuala	Gamboa.	Bohio.	Gatun Lake.
Sun. Jan. 8	126.6	93.2	46.2	14.7	14.6
Mon. Jan. 9	126.6	93.2	46.2	14.6	14.5
Tues. Jan. 10	126.6	93.1	46.1	14.4	14.4
Wed. Jan. 11	126.5	93.0	46.0	14.2	14.2
Thurs. Jan. 12	126.5	93.0	46.0	14.2	14.2
Fri. Jan. 13	126.5	93.0	46.0	14.1	14.1
Sat. Jan. 14	126.4	93.0	46.0	14.0	14.0
Height of low water	125.0	92.0	46.0		

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL

Colon	P. R. R.	Monday	Jan. 16
Advance	P. R. R.	Saturday	Jan. 21
Panama	P. R. R.	Saturday	Jan. 28
Allianca	P. R. R.	Saturday	Feb. 4
Colon	P. R. R.	Friday	Feb. 10
Advance	P. R. R.	Thursday	Feb. 16
Panama	P. R. R.	Thursday	Feb. 23
Allianca	P. R. R.	Wednesday	Mar. 1
Colon	P. R. R.	Tuesday	Mar. 7
Advance	P. R. R.	Monday	Mar. 13
Panama	P. R. R.	Saturday	Mar. 18

CRISTOBAL TO NEW YORK.

Cristobal	P. R. R.	Thursday	Jan. 19
Allianca	P. R. R.	Monday	Jan. 23
Colon	P. R. R.	Sunday	Jan. 29
Advance	P. R. R.	Friday	Feb. 3
Panama	P. R. R.	Friday	Feb. 10
Allianca	P. R. R.	Thursday	Feb. 16
Colon	P. R. R.	Wednesday	Feb. 22
Advance	P. R. R.	Tuesday	Feb. 28
Panama	P. R. R.	Tuesday	Mar. 7
Allianca	P. R. R.	Monday	Mar. 13
Colon	P. R. R.	Sunday	Mar. 19
Advance	P. R. R.	Saturday	Mar. 25

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 11th and 28th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Almirante	U. F. C.	Thursday	Jan. 12
Prinz Aug. Wilhelm	H.-A.	Saturday	Jan. 14
Santa Marta	U. F. C.	Thursday	Jan. 19
Magdalena	R. M.	Saturday	Jan. 21
Metapan	U. F. C.	Thursday	Jan. 26
Prinz Joachim	H.-A.	Saturday	Jan. 28
Zacapa	U. F. C.	Thursday	Feb. 2
Orotava	R. M.	Saturday	Feb. 4
Sibiria	H.-A.	Saturday	Feb. 4
Almirante	U. F. C.	Thursday	Feb. 9
Prinz Aug. Wilhelm	H.-A.	Saturday	Feb. 11
Santa Marta	U. F. C.	Thursday	Feb 16
Thames	R. M.	Saturday	Feb 18

COLON TO NEW YORK.

Zacapa	U. F C.	Thursday	Jan. 19
Orotava	R. M.	Monday	Jan. 23
Sibiria	H.-A.	Tuesday	Jan. 24
Almirante	U. F. C.	Thursday	Jan. 26
Prinz Aug. Wilhelm	H.-A.	Tuesday	Jan. 31
Santa Marta	U. F. C.	Thursday	Feb. 2
Thames	R. M.	Monday	Feb. 6
Sarnia	H.-A.	Tuesday	Feb. 7
Metapan	U. F. C.	Tuesday	Feb. 9
Prinz Joachim	H.-A.	Wednesday	Feb. 14
Zacapa	U. F. C.	Thursday	Feb. 16
Tagus	R. M.	Monday	Feb. 20

NEW ORLEANS TO COLON.

Cartago	U. F. C.	Wednesday	Jan. 11
Turrialba	U. F. C.	Saturday	Jan. 14
Parismina	U. F. C.	Wednesday	Jan. 18
Abangarez	U. F. C.	Saturday	Jan. 21
Heredia	U. F. C.	Wednesday	Jan. 25
Atenas	U. F. C.	Saturday	Jan. 28
Cartago	U. F. C.	Wednesday	Feb. 1

COLON TO NEW ORLEANS.

Atenas	U. F. C.	Thursday	Jan. 19
Cartago	U. F. C.	Thursday	Jan. 19
Turrialba	U. F. C.	Thursday	Jan. 26
Parismina	U. F. C.	Thursday	Jan. 26
Abangarez	U. F. C.	Thursday	Feb. 12
Heredia	U. F. C.	Thursday	Feb. 12

COLON TO BARBADOS, CALLING AT TRINIDAD.

Magdalena	R. M.	Tuesday	Jan. 31
Orotava	R. M.	Tuesday	Feb. 14

The next sailing of the Leyland Line will be as follows: William Cliff on or about January 28, for New Orleans via Kingston, Ja.

Hamburg-American steamers leave for New York every Tuesday at 10 a. m.; for Jamaica every fortnight, connecting there with steamers for all points in Cuba; for Port Limon every Tuesday, direct, or by way of Bocas del Toro.

Royal Mail steamers leave for New York on alternate Mondays at 5 p. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursday at 3 p. m.; for New Orleans via Port Limon and Puerto Barrios on Thursday at 6 p. m., and for New York on Thursday at 11 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3d and 20th of each month.

LAWS GOVERNING NAVIGATION

OF THE

PANAMA CANAL

(Part II of The Canal Record, January 18, 1911.)

Rules for the Navigation of the Panama Canal and Approaches thereto, Including all Waters under the Jurisdiction of the Isthmian Canal Commission.

In the following rules every steam vessel, which is under sail and not under steam, is to be considered a sailing vessel, and every vessel under steam, whether under sail or not, is to be considered a steam vessel.

The words *steam vessel* and *steamer* shall include any vessel propelled by machinery.

A vessel is *under way*, within the meaning of these rules, when she is not at anchor, or made fast to the shore, or aground.

Risk of collision can, when circumstances permit, be ascertained by carefully watching the compass bearing of an approaching vessel. If the bearing does not appreciably change, such risk should be deemed to exist.

Signals.

The whistle *signals* provided in these rules shall be sounded on an efficient whistle or siren sounded by steam or by some suitable substitute for steam.

A *short blast* of the whistle shall mean a blast of about one second's duration.

A *prolonged blast* of the whistle shall mean a blast of from four to six seconds' duration.

One short blast of the whistle signifies intention of or assent to steamer first giving the signal to direct course to own starboard, except when two steamers are approaching each other at right angles or obliquely, when it signifies intention of steamer which is to starboard of the other to hold course and speed.

Two short blasts of the whistle signify intention of or assent to steamer first giving the signal to direct course to own port, except when two steamers are approaching each other at right angles or obliquely, when the signal signifies desire of or assent to steamer which is to the port of the other to cross the bow of steamer to starboard.

Three short blasts of the whistle shall mean, "My engines are going at full speed astern."

When vessels are in sight of one another, a steam vessel under way whose engines are going at full speed astern shall indicate that fact by *three short blasts* on the whistle.

Rule 1. If, when steam vessels are approaching each other, either vessel fails to understand the course or intention of the other, from any cause, the vessel so in doubt shall immediately signify the same by giving several short and rapid blasts, not less than four, of the steam whistle, the *danger signal.*

Whenever the *danger signal* is given, the engines of *both steamers shall be stopped and backed* until the headway of the steamers has been fully checked; nor shall the engines of either steamer be again started ahead until the steamers can safely pass each other, and the proper signals for passing have been given, answered, and understood.

Rule 2. Steam vessels are forbidden to use what has become technically known among pilots as *"cross signals"*—that is, answering one whistle with two, and answering two whistles with one. In all cases, and under all circumstances, a pilot receiving either of the whistle signals provided in these rules, which, for any reason he deems injudicious to comply with, instead of answering it with a cross signal, shall at once sound the *danger signal* and observe the rule applying thereto (Rule 1).

Rule 3. The *signals for passing*, by the blowing of the whistle, shall be given and answered by pilots, in compliance with these rules, not only when meeting "head and head," or nearly so, but at *all times*, when the steam vessels are in sight of each other, when passing or meeting at a distance within a half mile of each other, and whether passing to the starboard or port.

The whistle signals provided in the rules for steam vessels meeting, passing, or overtaking, are never to be used except when steamers are in sight of each other, and the course and position of each can be determined in the day time by a sight of the vessel itself, or by night by seeing its signal lights. In fog, mist, or heavy rain storms, when vessels cannot see each other, fog signals only must be given.

Situations

Rule 4. When steam vessels are *approaching each other head and head—that is, end on, or nearly so*, it shall be the duty of each to pass on the port side of the other; and either vessel shall give, as a signal of her intention, one short and distinct blast of her whistle, which the other vessel shall answer promptly by a similar blast of her whistle, and thereupon such vessels shall pass on the port side of each other. But if the courses of such vessels are so far on the starboard of each other as not to be considered as meeting head and head, either vessel shall immediately give two short and distinct blasts of her whistle, which the other vessel shall answer promptly with two similar blasts of her whistle, and they shall pass on the starboard side of each other.

The foregoing only applies to cases where vessels are meeting end on, or nearly end on, in such manner as to involve risk of collision; in other words, to cases in which, by day, each vessel sees the masts of the other in a line, or nearly in a line, with her own, and by night, to cases in which each vessel is in such a position as to see both the side lights of the other.

It does not apply by day to cases in which a vessel sees another ahead crossing her own course, or by night to cases where the red light of one vessel is opposed to the red light of the other, or where the green light of one vessel is opposed to the green light of the other, or where a red light without a green light or a green light without a red light, is seen ahead, or where both green and red lights are seen anywhere but ahead.

Rule 5. Whenever a steam vessel is *nearing a short bend or curve in the channel*, where, from the height of the banks or other cause, a steam vessel approaching from the opposite direction cannot be seen for a distance of half a mile, such steam vessel, when she shall have arrived within half a mile of such curve or bend, shall give a signal by one long blast of the steam whistle, which signal shall be answered by a similar blast, given by any approaching steam vessel that may be within hearing. Should such signal be answered by a steam vessel upon the farther side of such bend, then the usual signals for meeting and passing shall immediately be given and answered; but, if the first alarm signal of such vessel be not answered, she is to consider the channel clear, and govern herself accordingly.

When steam vessels are moved from their docks or berths, and other boats are liable to pass from any direction toward them, they shall give the same signal as in the case of vessels meeting at a bend, but immediately after clearing the berths so as to be fully in sight, they shall be governed by the steering and sailing rules.

Rule 6. *When steam vessels are running in the same direction*, and the vessel which is astern shall desire to pass on the right or starboard hand of the vessel ahead, she shall give one short blast of the steam whistle, as a signal of such desire, and if the vessel ahead answers with one blast, she shall put her helm to port; or if she shall desire to pass on the port or left side of the vessel ahead, she shall give two short blasts of the steam whistle as a signal of such desire, and if the vessel ahead answers with two blasts, shall put her helm to the starboard; or if the vessel ahead does not think it safe for the vessel astern to attempt to pass at that point, she shall immediately signify the same by giving several short and rapid blasts of the steam whistle, not less than four, and under no circumstances shall the vessel astern attempt to pass the vessel ahead until such time as they have reached a point where it can be safely done, when said vessel ahead shall signify her willingness by blowing the proper signals. The vessel ahead shall in no case attempt to cross the bow or crowd upon the course of the passing vessel.

All steamers under way in the channel of the Canal shall proceed, either up or down the channel, as close to the starboard or right hand side of said channel as safety will allow. Vessels overtaking above named craft shall blow two blasts of the steam whistle, and upon receiving the proper response, shall pass the overtaken vessel on the port or left hand side, leaving the overtaken vessel on the starboard or right side

Every vessel coming up with another vessel from any direction more than two points abaft her beam—that is, in such a position with reference to the vessel which she is overtaking that at night she would be unable to see either of that vessel's side lights, shall be deemed to be *an overtaking vessel*; and no subsequent alteration of the bearing between the two vessels shall make the overtaking vessel a crossing vessel within the meaning of these rules, or relieve her of the duty of keeping clear of the overtaken vessel until she is finally passed and clear. As by day the overtaking vessel cannot always know with certainty whether she is forward of or abaft this direction from the other vessel she should, if in doubt, assume that she is an overtaking vessel and keep out of the way.

Rule 7. When two steamers are approaching any bend in the channel of the Canal or its harbors or approaches, side by side, or nearly so, running in the same direction, the steamer on the right or starboard side of the other shall have the right of way, and the steamer on the left or port side shall check her way and drop astern, and the steamer on the port side of the other shall keep at a safe distance astern (not less than three lengths) until both steamers have fully passed the bend and are again in the straight channel.

Rule 8. When two steamers are *approaching each other at right angles or obliquely so as to involve risk of collison*, other than when one steamer is overtaking another, the steamer which has the other on her own port side shall hold her course and speed; and the steamer which has the other on her own starboard side shall keep out of the way of the other by directing her course to starboard so as to cross the stern of the other steamer, or, if necessary to do so, slacken her speed, or stop, or reverse. The steamer having the other on her own port bow shall blow one blast of her whistle as a signal of her intention to cross the bow of the other, holding her course and speed, which signal shall be promptly answered by the other steamer by one short blast of her whistle as a signal of her intention to direct her course to starboard so as to cross the stern of the other steamer or otherwise keep clear.

If from any cause whatever the conditions covered by this situation are such as to prevent immediate compliance with each other's signals, the misunderstanding or objection shall at once be made apparent by blowing the danger signal, and both steamers shall be stopped and backed, if necessary, until signals for passing with safety are made and understood.

Rule 9. When a *steam vessel and a sailing vessel* are proceeding in such directions as to involve the risk of collision, the steam vessel shall keep out of the way of the sailing vessel.

Rule 10. Every steam vessel which is directed by these rules to *keep out of the way* of another vessel, shall, if the circumstances of the case permit, avoid crossing ahead of the other.

Rule 11. *In narrow channels* every steam vessel shall, when it is safe and practicable, keep to that side of the fairway or midchannel which lies on the starboard side of such vessel.

Rule 12. In obeying and construing these rules due regard shall be had to all *dangers of navigation and collision*, and to any *special circumstances* which may render a departure from the above rules necessary in order to avoid immediate danger.

Sound signals in fogs, etc.

Rule 13. In fog, mist, or heavy rainstorms, whether by day or night, signals shall be given as follows:

A steam vessel under way, except when towing other vessels, or being towed, shall sound, at intervals of not more than one minute, on the whistle or siren, a prolonged blast.

A steam vessel when towing other vessels shall sound, at intervals of not more than one minute, on the whistle or siren, three blasts in succession, namely—one prolonged blast followed by two short blasts.

Sea-going dredges when dredging in a fog shall give four blasts in succession—one prolonged blast followed by three short blasts.

A vessel towed may give, at intervals of not more than one minute, on the fog horn, a signal of three blasts in succession, namely—one prolonged blast followed by two short blasts, and she shall not give any other.

A vessel when at anchor shall, at intervals of not more than one minute, ring the bell rapidly for about five seconds.

Speed to be moderate in fog, etc.

Rule 14. Every steam vessel shall, in a fog, mist, or heavy rainstorm, go at a *moderate speed*, having careful regard to the existing circumstances and conditions.

A steam vessel hearing, apparently forward of her beam, the fog signal of a vessel, the position of which is not ascertained, shall, as far as the circumstances of the case admit, stop her engines, and then navigate with caution until danger of collision is over.

Posting of rules.

Rule 15. On steam and other motor vessels of over 100 gross tons, two copies of the placard form of these rules (Form B. L. I.) shall be kept posted up in conspicuous places in the vessel, one copy of which shall be kept posted up in the pilot house. On steam and other motor vessels of 25 gross tons and not over 100 gross tons, two copies of the placard form of these rules shall be kept on board, one copy of which shall be kept posted in the pilot house. On steam and other motor vessels of 25 gross tons and under, and of more than 10 gross tons, two copies of the placard form of the rules shall be kept on board, and, where practicable, one copy thereof shall be kept conspicuously posted up in the vessel. On steam and other motor vessels of not more than 10 gross tons, two copies of the pamphlet form of the rules shall be kept on board, and, where practicable, one copy thereof shall be kept conspicuously posted up in the vessel.

Lights to be carried by ferry boats on all waters under the jurisdiction of the Isthmian Canal Commission.

Rule 16. Ferry boats, propelled by machinery, and navigating the waters of the Canal Zone, shall carry the range lights and the side lights required by law to be carried on steam vessels.

Lights to be carried by barges, Canal boats, scows, and lighters being towed astern of steam vessels.

Rule 17. Barges, canal boats, scows, and lighters being towed astern of steam vessels, when towing singly or what is known as tandem towing, shall each carry a white light on the bow and a white light on the stern.

When towed with a hawser two or more abreast, when in one tier, they shall carry a white light on the bow and a white light on the stern of each of the outside boats; when in more than one tier, each of the outside boats shall carry a white light on its bow; and the outside boats in the last tier shall each carry, in addition, a white light on the outer after part of the stern.

Barges, etc., towed alongside a steam vessel, if on the starboard side of said steam vessel, shall display a white light on her own starboard bow, and if on the port side of said steam vessel, shall display a white light on her own port bow; and if there is more than one barge or canal boat alongside, the white lights shall be displayed from the outboard side of the outside barge or canal boat.

When barges, etc., are in tiers and towed at a hawser, there shall be carried on the forward port side of each tier a white light, and on the forward starboard side of the starboard boat in each tier a white light, and on the after port side of the port boat in the stern tier a white light, and on the after starboard side of the starboard tier a white light.

Rule 18. Rafts propelled by hand power, or by the current of the river or tide, or which shall be anchored or moored in or near the channel or fairway, or proceeding in tow of a steam vessel, shall carry one white light on each outside corner of the raft, making four lights in all.

Row boats and cayucos, whether under oars or sail, shall carry a white light, visible all around the horizon, at an elevation above the surface of the water of at least three (3) feet.

The white light required by these rules for rafts and other water craft shall be carried from sunset to sunrise, in a lantern so constructed as to show a clear, uniform, and unbroken light, visible all around the horizon, and of such intensity as to be visible on a dark night with a clear atmosphere at a distance of at least one mile. The lights for rafts shall be suspended so that the lights shall not be less than eight (8) feet above the surface of the water.

Rule relating to the use of searchlights.

Rule 19. Any master or pilot of any steam vessel who shall flash or caused to be flashed the rays of the searchlight into the pilot house of a passing vessel shall be deemed guilty of misconduct and shall be liable to have his license suspended or revoked.

Rule prohibiting unnecessary sounding of the steam whistle.

Rule 20. Unnecessary sounding of the steam whistle is prohibited within any harbor limits of the Canal Zone. Whenever any licensed officer in charge of any steamer authorizes or permits such unnecessary whistling, upon conviction thereof before the board of local inspectors having jurisdiction, such officer shall be suspended from acting under his license as the inspectors trying the case deem proper.

Rules concerning lights, etc.

Rule 21. The word "visible" in these rules, when applied to lights, shall mean visible on a dark night with a clear atmosphere.

Rule 22. The rules concerning lights shall be complied with in all weathers from sunset to sunrise, and during such time no other lights which may be mistaken for the prescribed lights shall be exhibited.

Rule 23. A steam vessel when under way shall carry:

(*a*) On or in front of the foremast, or, if a vessel without a foremast, then in the fore part of the vessel, a bright white light so constructed as to show an unbroken light over an arc of the horizon of twenty points of the compass, so fixed as to throw the light ten points on each side of the vessel, namely—from right ahead to two points abaft the beam on either side, and of such a character as to be visible at a distance of at least five miles.

(*b*) On the starboard side a green light so constructed as to show an unbroken light over an arc of the horizon of ten points of the compass, so fixed as to throw the light from right ahead to two points abaft the beam on the starboard side, and of such a character as to be visible at a distance of at least two miles.

(*c*) On the port side a red light so constructed as to show an unbroken light over an arc of the horizon of ten points of the compass, so fixed as to throw the light from right ahead to two points abaft the beam on the port side, and of such a character as to be visible at a distance of at least two miles.

(*d*) The said green and red side lights shall be fitted with inboard screens projecting at least three feet forward from the light, so as to prevent these lights from being seen across the bow.

(*e*) A sea-going steam vessel when under way shall carry an additional white light similar in construction to the light mentioned in subdivision (*a*). These two lights shall be so placed in line with the keel that one shall be at least 15 feet higher than the other, and in such a position with reference to each other that the lower light shall be forward of the upper one. The vertical distance of these lights shall be less than the horizontal distance.

Rule 24. A steam vessel when towing another vessel shall, in addition to her side lights, carry two white bright lights in a vertical line one over the other, not less than three feet apart, and when towing more than one vessel, shall carry an additional bright white light three feet above or below such lights, if the length of the tow measuring from the stern of the towing vessel to the stern of the last vessel towed exceeds 600 feet. Each of the lights shall be of the same construction and character, and shall be carried in the same position as the white light mentioned in Rule 23.

Such steam vessel may carry a small white light abaft the funnel or aftermast for the vessel towed to steer by, but such light shall not be visible forward of the beam.

Rule 25. A sailing vessel under way or being towed shall carry the same lights as are prescribed by Rule 23 for a steam vessel under way, with the exception of the white lights mentioned therein, which they shall never carry.

Rule 26. Whenever, as in the case of vessels of less than 10 gross tons under way during bad weather, the green and red side lights cannot be fixed, these lights shall be kept at hand lighted and ready for use; and, shall, on the approach of or to other vessels be exhibited on their respective sides in sufficient time to prevent collision, in such manner as to make them most visible, and so that the green light shall not be seen on the port side nor the red light on the starboard side, nor, if practicable, more than two points abaft the beam on their respective sides. To make the use of these portable lights more certain and easy, the lanterns containing them shall each be painted outside with the color of the light they respectively contain, and shall be provided with proper screens.

Rule 27. Pilot vessels when engaged on their station on pilotage duty shall not show the lights required for other vessels, but shall carry a white light at the masthead, visible all around the horizon, and shall also exhibit a flare-up light or flare-up lights at short intervals, which shall never exceed 15 minutes.

A steam pilot vessel when engaged on pilotage duty and not at anchor shall, in addition to the lights required for all pilot vessels, carry at a distance of eight feet below her white masthead light a red light, visible all around the horizon and of such a character as to be visible on a dark night with a clear atmosphere at a distance of at least two miles, and also the colored side lights required to be carried by vessels when under way.

When engaged on her station on pilotage duty and at anchor, she shall carry in addition to the lights required for all pilot boats, the red light above mentioned, but not the colored side lights

Rule 28. (*a*) Fishing vessels having less than 10 gross tons when under way, and not having their nets, trawls, dredges or lines in the water, shall carry the usual white light eight feet above the deck and shall have ready at hand a lantern with a green glass on one side and a red glass on the other side, and on approaching to or being approached by another vessel, such lantern shall be exhibited in sufficient time to prevent collision, so that the green light shall not be seen on the port side nor the red light on the starboard side.

(*b*) All fishing vessels and fishing boats of ten gross tons or upward, when under way and when not having their nets, trawls, dredges, or lines in the water, shall carry and show the same lights as other vessels under way.

(*c*) All vessels, when trawling, dredging, or fishing with any kind of dragnets or lines, shall exhibit, from some part of the vessel where they can be best seen, two lights. One of these lights shall be red and the other shall be white. The red light shall be above the white light, and shall be at a vertical distance from it of not less than six feet and not more than 12 feet; and the horizontal distance between them, if any, shall not be more than 10 feet. These two lights shall be of such a character and contained in lanterns of such construction as to be visible all around the horizon, the white light a distance not less than three miles and the red light of not less than two miles.

Rule 29. A vessel which is being overtaken by another shall show from her stern to such last mentioned vessel a white light or a flare-up light.

Rule 30. A vessel under 150 feet in length when at anchor, shall carry forward, where it can best be seen, but at a height not exceeding 20 feet above the hull, a white light in a lantern constructed so as to show a clear, uniform, and unbroken light visible all around the horizon at a distance of at least one mile.

A vessel of 150 feet or upwards in length when at anchor shall carry in the forward part of the vessel, at a height of not less than 20 and not exceeding 40 feet above the hull, one such light, and at or near the stern of the vessel, and at such a height that it shall be not less than 15 feet lower than the forward light, another such light.

The length of the vessel shall be deemed to be the length appearing in her certificate of registry.

Rule 31. Every vessel may, if necessary, in order to attract attention, in addition to the lights which she is by these rules required to carry, show a flare-up light or use any detonating signal that cannot be mistaken for a distress signal.

Rule 32. Nothing in these rules shall interfere with the operation of any special rules made by the government of any nation with respect to additional station and signal lights for two or more ships of war or for vessels sailing under convoy, or with the exhibition of recognition signals adopted by shipowners, which have been authorized by their respective governments, and duly registered and published.

Rule 33. A steam vessel proceeding under sail only, but having her funnel up, may carry in daytime, forward, where it can best be seen, one black ball or shape two feet in diameter.

Sea-going suction dredges when under way and dredging, shall carry besides the lights prescribed for steamers under way, between the two masts where they can best be seen, two red lights, approximately the same height as the masthead light of a steamer, in a vertical line one over the other, not less than six feet apart and of such a character as to be visible all around the horizon at a distance of at least two miles; and shall by day carry between the two masts where they can best be seen, in a vertical line one over the other not less than six feet apart, two black balls or shapes, each two feet in diameter.

Sea-going suction dredges, when dredging is stopped, and the dredge is proceeding either to or from her dumping ground, either loaded or light, shall at night extinguish the two red lights, and by day, lower the black balls.

Sea-going suction dredges, while actually engaged in dredging, as shown by the black balls or red lights, above, shall have right of way over all other vessels; but when not dredging, as shown by the absence of the black balls or red lights, shall observe all rules, and have no special privilege.

Rule 34. All boats of whatever character conveying high explosives shall carry a red flag in the day time and a red light at night, in addition to the regular lights.

Sound signals for fog, and so forth.

Rule 35. All signals prescribed by this article for vessels under way shall be given:

1. By "steam vessels" on the whistle or siren.
2. By "sailing vessels" and "vessels towed" on the fog horn.

The words "prolonged blast" used in this article shall mean a blast of from four to six seconds' duration.

A steam vessel shall be provided with an efficient whistle or siren, sounded by steam, or by some substitute for steam, so placed that the sound may not be intercepted by any obstruction, and with an efficient fog horn; also with an efficient bell. A sailing vessel of twenty tons gross tonnage or upward shall be provided with a similar fog horn and bell.

In fog, mist, or heavy rain storms, whether by day or night, the signals prescribed in this article shall be used as follows, namely:

(*a*) A sailing vessel under way shall sound, at intervals of not more than one minute, when on the starboard tack, one blast; when on the port tack, two blasts in succession, and when the wind is abaft the beam, three blasts in succession.

(*b*) A steam vessel when towing, shall, instead of the signals prescribed in subdivision (*a*) of this article, at intervals of not more than one minute, sound three blasts in succession, namely—one prolonged blast followed by two short blasts. A vessel towed may give this signal and she shall not give any other.

(*c*) All rafts or other water craft, not herein provided for, navigated by hand power, horse power, or by current of the river, shall sound a blast of the fog horn, or equivalent signal, at intervals of not more than one minute.

Steering and Sailing Rules.

Rule 36. *Preliminary—Risk of collision.* When two sailing vessels are approaching one another, so as to involve risk of collision, one of them shall keep out of the way of the other, as follows, namely:

(*a*) A vessel which is running free shall keep out of the way of a vessel which is close-hauled.

(*b*) A vessel which is close-hauled on the port tack shall keep out of the way of a vessel which is close-hauled on the starboard tack.

(*c*) When both are running free, with the wind on different sides, the vessel which has the wind on the port side shall keep out of the way of the other.

(*d*) When both are running free, with the wind on the same side, the vessel which is to the windward shall keep out of the way of the vessel which is to the leeward.

(*e*) A vessel which has the wind aft shall keep out of the way of the other vessel.

Rule 37. Where, by any of these rules, one of the two vessels is to keep out of the way, the other shall keep her course and speed.

Rule 38. Every steam vessel which is directed by these rules to keep out of the way of another vessel shall, on approaching her, if necessary, slacken her speed or stop or reverse.

Rule 39. Notwithstanding anything contained in these rules every vessel, overtaking another, shall keep out of the way of the overtaken vessel.

Rule 40. Sailing vessels under way shall keep out of the way of sailing vessels or boats fishing with nets, or lines, or trawls. This rule shall not give to any vessel or boat engaged in fishing the right of obstructing a fairway used by vessels other than fishing vessels or boats.

Rule 41. Nothing in these rules shall exonerate any vessel, or the owner or master or crew thereof, from all the consequences of any neglect to carry lights or signals, or of any neglect to keep a proper lookout, or of the neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

Distress signals.

Rule 42. When a vessel is in distress and requires assistance from other vessels or from the shore, the following shall be the signals to be used or displayed by her, either together or separately, namely:

In the day time.

A continuous sounding with any fog-signal apparatus, or firing a gun.

At night

First. Flames on the vessel as from a burning tar barrel, oil barrel, and so forth.

Second. A continuous sounding with any fog-signal apparatus, or firing a gun.

Third. Rockets or shells showing stars, fired one at a time at short intervals.

Rules for Government of Craft on the Navigable Waters of the Canal Zone, including all waters under the Jurisdiction of the Isthmian Canal Commission.

Rule 43. Every barge, lighter, canal boat, or scow that is moored alongside of any ship or another barge, or to the side of the Canal, or to any wharf, or lying at anchor on navigable waters of the Canal Zone, shall show between the hours of sunset and sunrise, a white light on the bow and stern, at least three feet above the deck of said vessel, and not less than eight feet from the bow and stern thereof.

Rule 44. When lighters, barges, scows, or canal boats are tied or moored along any wharf, or along the shore in any channel in the navigable waters of the Canal Zone, including the Canal and approaches thereto, it shall be unlawful to moor them more than two deep, thereby obstructing the channel.

Rule 45. When it becomes necessary to moor or tie any barge, lighter, scow, or canal boat alongside a ship or another barge in the navigable waters of the Canal Zone, for the purpose of transhipping cargo to or from the ship or barge, it shall be unlawful to moor or tie more than one barge deep alongside said ship or other barge, thereby obstructing the channel.

Provided, That power hoists in addition may tie alongside the barges aforesaid, while actually engaged in transhipping cargo. Nothing in this rule shall be construed as affecting the right of the Constructing Engineer to moor barges used in Canal construction in any manner he may deem proper.

Rule 46. Every piece of plant, whether dredge, rock breaker, or drill barge, that is engaged in excavating or preparing to excavate the Canal, whose position is stationary, or moving from time to time, over the face of the shoal, that it is working on or removing, shall have the prior right to such position, and it shall be unlawful for any person or persons, navigating a ship or otherwise, to foul above-named plant or its moorings in any way whatever.

Rule 47. Any piece of plant, whether dredge, rock breaker, or drill barge, that is operated by means of fore, aft, and side chains, shall carry when said fore, aft, and side chains are taut, a black ball on each side of the dredge, in some conspicuous place, at least eight (8) feet above the deck, and near the position of the side chains; at night these balls shall be replaced by a red light and which shall show all around the horizon and be plainly visible at a distance of one mile.

Rule 48. When a steamer wishes to pass the dredge, drillboat, or rockbreaker, at a point where it might foul its side chains, it should ask permission to pass, by using the usual signal for port or starboard, as provided in the foregoing rules, and the dredge, rockbreaker, or drillboat shall immediately lower its chain on the side asked for by the steamer, indicating its fulfillment of this by, in the daytime, lowering the ball; in the night, putting out the red light.

Rule 49. If the dredge, drillboat, or rockbreaker, is unable to lower its side chain, or should consider it dangerous for the steamer to pass on the side asked for, the dredge, drillboat, or rockbreaker, will blow the danger signal when the steamer will stop until the ball or light signal given above shall be shown.

Rule 50. All barges moved from berth to berth along wharves or banks of the Canal shall be moved by being handled by proper towboat for same, and it shall be unlawful to move barges by handpower in the navigable fairway of the Canal, unless to preserve life or property in peril.

Rule 51. No coal, ashes, or rubbish shall be thrown overboard by any vessel, or any person, at any wharf, or in the channel of the Canal.

Rule 52. No vessel shall make fast to any marking buoy, and will be only allowed to use for hauling or making fast the buoys placed for that purpose.

Rule 53. Any vessel arriving at the ports with gunpowder or other explosives on board will not be admitted to the wharves or allowed to land the same until a report is made to the proper authority and an arrangement entered into for the immediate disposal of the explosives.

Rule 54. Vessels should not lie at anchor in the channel of the Canal, or its approaches, unless in case of a vessel being in distress, when assistance should be at once asked for, and given.

Provided, That for special reasons permission may be given to anchor in the channel for a limited time by the engineer in charge of construction.

Rule 55. Vessels will be held liable for all damages done to the Canal or the plant of the Isthmian Canal Commission, of any character or description, whether the damage is done to the floating equipment, to the wharves, or banks of the Canal; and in the case of the sinking of any floating or other equipment belonging to private persons, or corporations in the channel of the Canal, or its approaches, or its side channels or along its wharves, that create or tend to create an obstruction in the Canal or its approaches, side channels, or along its wharves, the person or company owning the sunken equipment shall be given thirty days to remove the same; and on his or their failure to do so, the construction engineer shall remove the obstruction; and the persons or corporation owning the same shall pay all the expenses and cost of the removal of the obstruction, to be collected by a civil suit in the Zone courts and a levy and sale of any property of the persons or corporations found in the Canal Zone, or its harbors.

Provided, That the Chief Engineer of the Panama Canal may order the construction engineer to remove the obstruction at once, without waiting on the persons or corporations owning the same, and the costs of such removal shall be taxed and collected as mentioned above.

Rule 56. All masters of vessels not engaged in coastwise trade or employed by the Isthmian Canal Commission or Panama Railroad Company in harbor or Canal work or construction, are forbidden to allow their vessels to be boarded by any one, except the pilot and such other officers of the port as are required to do so by the nature of their duties, and also the agent of the vessel if he has the consent of the quarantine officer. Any person going aboard prior to the issuance of free pratique shall be subject to the same restrictions as the personnel of the vessel if, in the opinion of the quarantine officer, this is necessary for the protection of the public health.

Rule 57. Every vessel not engaged in the coastwise trade entering the harbor of any port in the Canal Zone, shall proceed to the quarantine ground designated by the quarantine officer.

Rule 58. Vessels wishing to unload or load ballast will be assigned anchorage by the captain of the port, and must have a proper chute, so arranged as to prevent ballast from falling overboard, if said anchorage is in the channel of the Canal or along its wharves or on the anchorage ground, assigned by the quarantine officer, or port captain.

Rule 59. No warp or line shall be passed across any channel or dock so as to obstruct the passage of vessels or cause any interference with the discharging of cargoes.

Rule 60. If any damages shall be caused by vessels or the mooring cables to the works of any harbor, the parties responsible for same shall pay the costs for the necessary repairs, and the same may be recovered in the Circuit Courts of the Canal Zone.

Rule 61. Steamers on entering or leaving a port shall proceed at a speed not exceeding six knots per hour.

Rule 62. If a vessel occupying a berth at a wharf or pier, with or without the consent of the port captain, fails to vacate such berth when ordered by the port captain, or when not loading or unloading, fails to make way for another vessel that wishes to load or unload, the port captain shall then cause such vessel to be moved to some other berth, or be anchored in the stream, and the expense of such removal shall be paid by the master, agents, or owners of such vessel, and in case of their neglect or refusal to pay such expense upon demand, it may be recovered in an action before any court having jurisdiction.

Rule 63. No vessel shall be entitled to a berth until application has been made by the master, owner, or consignee of the vessel to the captain of the port, and such application must state the length, draught, and kind of cargo. No one but the captain of the port has authority to assign berths to vessels. No vessel, whether at anchor or lying at wharf, shall shift its berth, without permission from the captain of the port.

Rule 64. All goods, merchandise, and material of every kind, landed or placed on any pier, bulkhead, or other wharf property, or upon reclaimed land, must be removed therefrom within 36 hours: *Provided*, That the captain of the port for good cause may extend the time. All goods, merchandise, and materials of every kind encumbering any pier, bulkhead, or other wharf structure, or reclaimed land, after the time designated for the removal thereof shall have expired, will be liable to be removed by the captain of the port to any warehouse or yard, at the sole risk and expense of the owner of any such goods, merchandise, or materials, and all expense incurred for such removal and storage, or otherwise, shall be and become a lien thereon, and such goods, merchandise, and materials will not be delivered to the owner until the expense of such removal and storage has been paid.

Rule 65. It shall not be lawful for the owners, lessees, or occupants of any pier, wharf, or bulkhead, which has been covered with a shed, to use such shedded pier, wharf, or bulkhead for the permanent storage of goods, merchandise, cargo, or material of any kind which may be discharged or placed thereon.

Rule 66. Piers, wharves, and bulkheads thus shedded are designated for the protection of merchandise and cargo, in transit, and such merchandise and cargo must be removed therefrom in 36 hours: *Provided*, That the captain of the port may for good cause extend the time.

Rule 67. The captain of the port shall prevent any accumulation of material upon all piers, wharves, bulkheads, and reclaimed land, and whenever any pier, wharf, bulkhead, or reclaimed land shall be encumbered or obstructed in its free use by any vessel, merchandise or material, or by any structure, encumbrance, or obstruction not authorized or permitted, the captain of the port is authorized to require the owner, agent, consignee, or person occupying or in charge of such merchandise or obstruction, to remove the same without delay. Upon receiving said order, the owner, agent, consignee or person in charge of vessel, merchandise, material, structure, encumbrance, or obstruction, in reference to which said order or direction was given, shall comply with the same without delay, and upon his refusal or failure to do so, shall be punished by a fine or imprisonment or both, as is hereinafter provided.

Rule 68. No fishing nets will be allowed in any place in the Canal, along its wharves, or in its channels wherever in the opinion of the Construction Engineer, or the captain of the port, such nets interfere or might interfere with navigation, and it shall be the duty of the owner thereof, upon notification, to remove them immediately.

Rule 69. No vessel shall leave the quarantine ground until the requirements of the rules in regard to examination by the quarantine officer have been complied with.

Rule 70. Vessels must not anchor in the harbors in any location which will interfere with the navigation of all the channels.

Rule 71. Vessels must not anchor on the range line of any range lights.

Rule 72. All vessels are forbidden to moor to any beacon, buoy, or other harbor mark or to make use of the same for warping.

Rule 73. Pilots finding any buoy out of position, or lights not working properly shall immediately report same to captain of the port, and to the construction engineer.

Rule 74. Steamers while within a harbor must take all precautions to avoid the issue of sparks. Vessels will be liable for all damages resulting from neglect of this rule.

Rule 75. No pitch, tar, turpentine, or other combustible shall be boiled on any wharf, or on board any vessel without permission of the captain of the port.

Rule 76. In case of fire on board a vessel, all masters of other vessels shall render such assistance as may be in their power.

Rule 77. A vessel anchored or moored in the harbor or lying at dock must at all times, night or day, have on board a sufficient number of men to take care of such vessel.

Rule 78. No vessel shall unload lumber, timber or piles in the waters of a harbor without permission from the captain of the port, who shall designate where such lumber shall be rafted, so as to avoid obstructing or hindering the movement of vessels.

Rule 79. Lighters, barges, scows and other vessels belonging to persons or corporations of any and all descriptions shall be anchored in such places as the captain of the port may direct, and shall be at all times under his supervision and direction.

Rule 80. The captain of the port shall keep in his office records of all his proceedings, with statements of the results of all examinations and inquiries made by him, which records may be inspected by interested parties.

Rule 81. All notifications and requests to the captain of the port shall be made at his office in writing, and shall be duly entered and filed by him.

Rule 82. No vessel shall leave the harbor until the payment of all charges and fines imposed hereunder have been made.

Rule 83. It shall be unlawful for any person, without first having secured a pilot's license from the government of the Canal Zone, to navigate any steam vessel with a net tonnage of more than 15 tons burden in Canal Zone waters.

Rule 84. It shall be the duty of the captain of the port to enforce and superintend the execution of all rules and regulations of the port for preventing nuisances at the wharves, for regulating and stationing all ships or vessels in the harbor; for removing from time to time ships and vessels, in order to accomodate and make room for others and for compelling the masters and captains of ships and vessels to accomodate each other, so that ships and vessels arriving from sea, shall, for a reasonable time, be entitled to berths next to the wharf until they have landed their cargoes.

Rule 85. All vessels moored to wharves, whether loading or unloading cargo, or in the ordinary way of business, shall be moored to the wharves with rope hawsers only, and it shall be unlawful for chain or wire hawsers to be used on any public wharf in the Canl Zone without the specific permission of the port captain.

Rule 86. All vessels, whether commercial or otherwise, moored to wharves in the Canal Zone, shall be compelled to keep watch at night and to have suitable fire-fighting apparatus on hand.

Rule 87. Whenever it shall become necessary to remove any especially inflammable cargo from commercial ships, or ships at public wharves of the Canal Zone, such as oils, gasoline, naphtha, petroleum, etc., it shall be necessary for notice to be given to the port captain at least two hours before such cargo shall be discharged on the wharf, so that proper means can be provided to dispose of this class of material at the earliest possible moment.

Rule 88. The provisions in regard to wharves are to apply to the public wharves of the Canal Zone and not to the construction wharves belonging to the Isthmian Canal Commission under the control of the construction engineer, who alone shall have charge of all construction wharves in his respective district and all United States vessels employed in construction are exempt from the rules laid down, as far as being under the direction and control of the port captain is concerned, and are solely responsible to the construction engineer in their respective districts; Isthmian Canal Commission wharves, under the charge of and operated by the Chief Quartermaster, are also exempt from the operation of these rules, and are solely under the direction of the Chief Quartermaster.

Rule 89. It shall not be lawful for any person or persons, navigating a vessel or otherwise, to take possession of or make use of for any purpose, or build upon, alter, deface, destroy, move, injure, obstruct by fastening vessels thereto or otherwise or in any manner whatever, impair the usefulness by delay or otherwise of any seawalk, bulkhead, jetty dike, levee, wharf, pier or other work built by the Isthmian Canal Commission, or any piece of plant, floating or otherwise, used in the construction of such work, under the control of the Isthmian Canal Commission, in whole or in part, made or used for the preservation and improvement of the Panama Canal or its channels, or approaches.

Rule 90. The board of local inspectors shall issue certificates of seaworthiness to any launch or boat of any description, whether propelled by machinery, sail, or oars, of less than 15 tons net, which is engaged in carrying passengers in any parts of the waters of the Canal Zone, and shall state in such certificate the number of passengers allowed to be carried. Any vessel over 15 tons net, whether propelled by machinery or sail and carrying passengers on any parts of the waters of the Canal Zone, shall be under the supervision of the board of local inspectors as regards to her seaworthiness and equipment and the number of passengers to be carried.

Rule 91. The territory over which these rules and sections are effective, are all waters in Limon Bay, and waters entering it situated south of a line running due west from the base of the statue of Christopher Columbus as now standing on Cristobal Point, and such portion of the Caribbean terminus of the Isthmian Canal as may be used for harbor purposes, and that portion of Panama Bay lying west of a line running due north from the east end of Naos Island and north of a line running due west from the same point, also such portions of the Pacific terminus of the Isthmian Canal as may be used for harbor purposes, also any portion of the Panama Canal that may be used by construction boats or plant of the Isthmian Canal Commission, or that may be opened to public use from time to time. And any boat, vessel, scow, raft, or other craft, used or employed in violating any of the provisions of Rules 33, 46, 49, 51, 60, and 89 shall be liable for all damages that may be done to the plant of the Isthmian Canal Commission, and said, boat, scow, raft, or other craft may be proceeded against summarily by way of libel in the Canal Zone Circuit Courts.

Rule 92. These rules and sections hereinbefore named shall become effective when approved by the proper authorities, and when they have been published by printing in a newspaper of public circulation in the Canal Zone.

Rule 93. These rules shall apply to and govern the navigation and use of the waters of the Panama Canal, as the canal is now, or hereafter may be constituted, as well as all Canal channels, lakes, harbors, and other auxiliary waters as may now or hereafter be deeemed necessary for Canal purposes or aids, or which may now or hereafter be under the jurisdiction of the Isthmian Canal Commission or the Canal Zone Government.

Rule 94. Any person who fails or refuses to comply with any provision or requirement in these rules set forth, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished agreeably to the provisions of Section 2 of the Executive Order of July 25, 1910; namely, by a fine not to exceed $500 or by imprisonment in the district jail of not more than six months, or by both such fine and imprisonment, in the discretion of the court.

Approved: J. M. DICKINSON, *Secretary of War.*

WAR DEPARTMENT, December 21, 1910.

CANAL RECORD

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NOTES OF PROGRESS.

Chairman's Monthly Report.

The report of the Chairman of the Isthmian Canal Commission for the month of December is published in full in other columns of this issue of THE CANAL RECORD. It gives a detailed account of the progress of Canal work in all departments and divisions.

It will be noted that there is a difference of 343,198 cubic yards in the amount of material excavated during the month of December shown in the excavation table published in THE CANAL RECORD of January 18, and the monthly report to the Secretary of War, which appears in this issue. This difference arises from the fact that 123,403 cubic yards of material removed by the Atlantic Division, and 219,795 cubic yards removed by the Pacific Division were improperly charged to "plant" excavation.

The material removed by the Atlantic Division consisted of 23,199 cubic yards "dry" excavation for Gatun Dam, and 97,731 cubic yards "wet" excavation for the Colon fill. The material removed by the Pacific Division consisted of 219,795 cubic yards "wet" excavation for the channel to the Panama railroad lumber dock. The material in question was removed by Commission equipment, but should have been charged to the items of work necessitating the excavation.

Another Break in Culebra Slide.

The west bank of the Canal, at a point opposite the Culebra hotel, began to move into the Cut between 8 and 9 p. m., on Wednesday, January 18, involving from 200,000 to 250,000 cubic yards of material, and completely covering the 35-foot berm on the 135-foot level, which was secured only a short time previously. The movement did not encroach on the lower tracks in the Cut to any extent, and the regular operations there were not interfered with. A break in the bank was expected at this point during the present year, but came a little sooner than was anticipated. All of the material, however, is included in previous estimates, and, therefore, does not affect excavation figures.

The break extended back and included a part of the street known as "Steam shovel row." A number of houses on this street situated nearest the danger zone, have been removed from time to time during the past year, and those remaining were not involved in the recent slide, although the bank broke sharply within 15 feet of one of the buildings. In view of a possible future break in this locality, however, a force of men were set at work immediately dismantling eight type-15 quarters, four of which will be reerected in another part of the village; two will be taken to Pedro Miguel, and the remaining two to Gorgona.

The break in the west bank at Culebra extends for a distance of about a mile. The first important break occurred on November 16, 1909, and since that time, a number of movements have taken place. In view of the fact that another slip may be expected at any time in a section of the bank, south of the recent break, and to diminish any further annoyance therefrom, the Chief Engineer has authorized immediate excavation along the upper level from Culebra to Rio Grande. A steam shovel began this work on Monday, January 23, utilizing the old Panama railroad track which runs along this level in making the pioneer cut, and another shovel commenced work on January 24. The spoil will be wasted on the old dump in the vicinity of the Culebra railroad station, and dirt trains will be run over the old Panama railroad track, through Rio Grande and Enterprise and the old Rio Grande quarry to this dump. It is estimated that over 200,000 cubic yards of material will be removed at this point.

Closing of Gatun River.

The closing of the Gatun River, near Mitchellville on the Panama railroad relocation, made necessary by the construction of the railroad embankment over the valley, was authorized by the Chief Engineer on January 23. The building of a bridge where the old bed of the stream crosses the relocation was found to be impracticable for lack of a suitable foundation, and a new site was selected a short distance south, but on a higher level. The damming of the old channel will cause the water to rise to the 45-foot level, and will submerge a considerable area east of the railroad track. The Counsel of the Commission has been authorized to adjust the claims of occupants for the value of their improvements.

Temporary Use of French Dump Cars.

In order to obtain a supply of gravel from the Chagres River during the present dry season, and because no other cars were available, President Taft on January 16 granted permission to the Panama railroad to use 25 of the old French 6-meter dump cars for the short haul from the gravel bed to the storage pile. The President's consent was necessary for the use of these cars, as they are not equipped with safety appliances, and their operation would have been contrary to Executive Orders Nos. 1002 of January 6, 1909. and 1085 of June 11, 1909, making the provisions of the safety appliance act effective in the Canal Zone. Permission to use the cars is accorded only to July 1, 1911.

Economy in Use of Dynamite.

Less than two-thirds of the quantity of dynamite used in blasting in the Central Division during the months of October, November, and December, 1909, were used during the same months of 1910, although the quantity of rock excavated during these months, in 1910 was almost identical with 1909. A statement showing the amounts by months, and the cubic yards of material excavated per pound of dynamite, follows:

MONTHS.	Dynamite used.		Rock excavated.	
	1909	1910	1909	1910
	Pounds.	*Pounds.*	*Cu. Yds.*	*Cu. Yds.*
Oct...	806,700	481,750	1,196,297	1,076,678
Nov..	659,600	391,500	968,246	1,053,077
Dec...	439,350	427,800	1,005,088	1,008,998
Total.	1,905,650	1,301,050	3,169,631	3,138,753

	1909	1910
Cubic yards of material per pound of dynamite..................	1.66+	2.41+
Pounds of dynamite per cubic yard of material..................	0.60+	0.41+

Dredging in Pacific Entrance.

The dredged channel at the Pacific entrance to the Canal will extend over a distance of seven and one-half miles, or from the end of the cut out at sea, to a point nearly opposite Corozal, beyond which it is proposed to accomplish the excavation by hydraulic plant, and by steam shovels. The channel has been entirely excavated for over four and one-half miles of the distance, and at the present time, the operations of the dredging fleet are principally confined to that part north of the Panama railroad wharf. A few days ago the cut at the farthest limit north had been sufficiently widened and deepened by ladder dredges to permit the suction dredge *Culebra* to operate there, but this is only possible at high tide, as a water pipe line extends across the Canal a short distance below, which would obstruct the passage of the dredge at mean or low tides.

There is an open channel of an average width of about 720 feet top and 500 feet bottom, except in three instances, and an average depth of over 30 feet, up the Canal from Balboa. In places the excavation is down to the bottom depth of 45 feet. The above water excavation along the east bank is nearly completed, only one rock projection remaining to be removed on which drillers are now at work. On the

NOTES OF PROGRESS.

(*Continued.*)

west bank there are two projections composed of rock and clay, with rock preponderant, to be taken out, and the ladder dredge *Badger* and dipper dredge *Cardenas* are engaged in excavating one of these, the former digging to a depth of 42 feet, and the latter to the full depth of 45 feet. The other point, situated one-fourth of a mile south, is being drilled and mined. It will be broken up into two sections, with 40 holes drilled to a depth of 60 feet to each section, each hole containing a charge of 250 pounds of dynamite. The one blasting operation will involve the use of 10,000 pounds of dynamite. When this point has been broken up, practically all of the above water drilling and blasting from Corozal to the sea will have been completed.

The ladder dredge *Mole*, which has recently been fitted with a new and longer ladder, was set at work on Monday, January 23, cleaning the last breaking of rock on shoal 2285; this shoal before the last breaking showed a depth of 41.1. The *Marmot* is continuing the excavation for the approach channel to the new freight dock, and at present is making an angle cut across this channel, heading for the east bank, which it will enter. As much material as possible in this bank will be excavated by the dredge, without interfering with the track leading from the sand dock.

Gatun Dam Spillway.

Concrete was placed in the spillway of Gatun Dam during the week ending January 21, as follows:

Date.	Concrete laid.	Hours worked.	No. Mixers.
	Cu. Yds.		
January 16	56	3:30	1
January 17	80	6:30	1
January 18	48	3:00	1
January 19	40	3:30	1
January 20	....	....	....
January 21	....	....	....
Total	224	16:30	
Previously reported	113,862		
Grand total	114,086		

Ancon Rock Crusher.

A statement of the rock crushed at Ancon quarry during the week ending January 14, follows:

Date.	Hours worked.	Cubic Yards.
January 9	9:45	3,368
January 10	9:55	3,198
January 11	6:45	2,678
January 12	9:30	2,771
January 13	6:35	2,432
January 14	10:30	3,623
Total	53:00	18,070

Interlocking Plant at Mount Hope.

An interlocking plant will be installed by the Panama railroad at Mount Hope to operate the cross-over from the yard track of the Depot Quartermaster's material stores to the main line. The outfit will consist of a 6-lever machine, with accessories, and its method of operation will be the same as the other interlocking plants of the railroad company. It is designed to insure the safe passing of trains at this point, where two accidents have occurred, one recently. The plant will be attended by the Mount Hope operator. The old cabin is too small, and the waiting pavilion for first-class passengers close by is being extended and partially enclosed, which will provide space for a ticket office, and also for the lever mechanism.

Record Output at Gorgona Foundry.

The output of the foundries at Gorgona during December was the largest in their history. The iron foundry turned out 795,958 pounds of iron castings, and the brass foundry 48,350 pounds of brass castings. The output was twice that of December, 1909.

Lights at Toro Point.

Notice has been sent to the Government of Panama, and the interested bureaus of the United States Government, that one red and one white light have been placed at the end of the trestle that is being built in Limon Bay from Toro Point for the construction of the breakwater. The position of the lights will change as the building of the trestle advances.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Over 50 per cent of the concrete for the system of three twin locks at Gatun has been laid, the exact amount in place at the close of work on January 21, being 1,051,723½ cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending January 21, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours:

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
January 16	1,748	29:59	7	698	8:40	2	149	2,595
January 17	2,390	40:35	6	592	9:40	2	123¼	3,105¼
January 18	2,238	35:43	6	580	8:40	2	227¾	3,045¾
January 19	2,226	35:51	6	460	6:10	2	221	2,907
January 20	2,172	36:37	6	476	8:40	2	178	2,826
January 21	2,330	38:09	6	562	8:40	2	196¾	3,088¾
*Portable mixers	....	....	......	447½	....	......	....	447½
Total	13,104	216:54		3,815½	50:30		1,095¾	18,015½
Previously reported	....	....	......	....	....	......	....	1,033,708¼
Grand total	....	....	......	....	....	......	....	1,051,723½

*The 447½ yards shown for the portable mixers were placed on the following days: January 16tb, 19½ yards; January 17th, 21½ yards; January 18th, 86 yards; January 19th, 98 yards; January 20th, 103 yards; January 21st, 119½ yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is over 60 per cent completed, 507,361 cubic yards, out of a total of 837,400, having been placed at the close of work on January 21. The record for each of the six 8-hour working days of last week, follows:

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant. 2-cubic yard mixers.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
January 16	1,666	16:00	2	316	7:00	1	7	1,989
January 17	1,276	14:00	2	230	5:00	1	5	1,511
January 18	1,282	14:00	2	284	8:00	2	3	1,569
January 19	1,144	13:00	2	270	7:25	2	....	1,414
January 20	1,452	16:00	3	140	3:50	1	14	1,606
January 21	1,334	16:00	3	126	4:50	1	8	1,468
Totals	8,154	89:00	2.33	1,366	35:25	1.33	37	9,557
Previously reported	....	....	......	....	....	......	4,081	497,804
Grand total	....	....	......	....	....	......	4,118	507,361

MIRAFLORES LOCKS.

Over eight per cent of the concrete for the system of locks at Miraflores has been laid, the amount in place at the close of work on January 21, aggregating 113,091 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

Date.	Auxiliary Plant.										Total.
	2-cubic yard mixers.			½-cubic yard mixers.			¼-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
Jan. 16	470	15:10	2	512	27:50	4	104	9:00	1	55	1,141
Jan. 17	440	16:00	2	519	31:50	5	83	5:50	1	52	1,094
Jan. 18	512	16:00	2	724	41:50	5	97	8:50	1	35	1,368
Jan. 19	508	16:00	2	543	33:00	5	47	4:50	1	46	1,144
Jan. 20	596	15:50	2	563	36:50	5	98	9:00	1	35	1,292
Jan. 21	516	16:07	2	451	27:00	4	98	9:00	1	30	1,095
Total	3,042	94:67	2	3,312	197:00	4:67	527	45:50	1	253	7,134
Previously reported	....	....	......	....	....	......	....	....	......	2,619	105,957
Grand total	....	....	......	....	....	......	....	....	......	2,872	113,091

SOCIAL LIFE OF THE ZONE.

Women's Clubs.

The meeting of the Canal Zone Federation of Women's Clubs will be held at the Hotel Tivoli on Tuesday, January 31. Delegates and alternates accredited from the federated clubs are expected to arrive at Ancon on the morning train and be present at the business meeting which will convene in the ballroom of the hotel at 9 o'clock. Through the courtesy of the officials of the Panama Railroad Company, a special car will be placed at the rear of the morning train for the clubwomen, and also on the train leaving Colon at 10.30. Returning, the two cars will be added to the train leaving Panama at 5.30. Cards for transportation will be issued to all club members. These cards will be signed with the bearer's name and countersigned by the secretary of the club to which she belongs. They are not transferable. The delegates and alternates are requested to present their credentials to the chairman of the credentials committee, who will receive them on the train en route to Panama. The afternoon session will begin at two o'clock and will consist of addresses and a short program, followed by a reception. All women, who are interested in club work, as well as those who wish to meet Miss Boswell, are cordially invited to be present.

At the meeting of the Gorgona Woman's Club on Thursday, January 12, the president of the federation, Mrs. Thomas E. Brown, Jr., was the guest, and made a short address on club work.

The Cristobal Woman's Club has extended an invitation to the women of Cristobal and Colon to hear an address by Miss Helen Varick Boswell at the clubhouse on Wednesday afternoon, February 1, at 3 o'clock.

Miscellaneous Events.

The Gatun Sunshine Society has been reorganized and meetings are held in the lodge hall on the first and third Wednesdays in each month. Mrs. Harry Porter is president; Mrs. Nat Johnson, vice-president; Mrs. Forbes, secretary, and Mrs. Farrow, treasurer. It has not yet been decided what the special work for the season will be. The membership is good, and the interest in the work is increasing.

Gatun Lodge, No. 5, Independent Order of Odd Fellows, held a public installation of officers on Friday evening, January 20. Following the installation, there was an informal reception, and refreshments were served.

A dance for the benefit of the church of the Holy Redeemer, Roman Catholic, now under construction at Culebra, was held in the lodge hall on Thursday evening, January 19. The services of the Marine Band were given through the courtesy of Major Smedley D. Butler, Commandant at Camp Elliott. The receipts amounted to about $150.

On Friday evening, January 20, the second of a number of subscription dances that are being given by residents of Culebra, was held in the clubhouse. The Culebra Dancing Club held its dance on Saturday evening, January 22.

The N. A. D. T. Club will give a dance at Ancon Hall on Friday evening, January 27. A valentine party and dance will also be given by the club on Friday evening, February 10.

Humane Society Notes.

Seventy-five boys from the Panama orphan asylums, accompanied by several Brothers from one of the ecclesiastical orders, were guests of the Canal Zone Humane Society on January 2, and were given a day's outing at Colon. Two additional cars were placed on the morning and evening trains for their accommodation. The society donated the boys the sum of $65 gold, with which to purchase their lunch, and the day was spent in visiting the boys of the Colon asylum, where games were played, and where the boys' band from the asylum on the Sabanas road furnished music.

The humane society has authorized the placing of a sign on the Sabanas road at the Canal Zone boundary, on which will be printed a warning, in English and Spanish, to all drivers that the humane laws will be enforced. It will be visible on approaching from either side, and, by the order of the President of the Republic, will be stationed on Panamanian territory. In recognition of his sympathy and cooperation with the work, President Arosemena has been elected honorary president of the Canal Zone Humane Society.

Sale of American Red Cross Christmas Seals in the Canal Zone.

The sale of Red Cross Christmas seals in the Canal Zone during the recent season numbered 6,308. They sell at one cent each, and this was the first time they have been sold on the Isthmus. Twelve and one-half per cent of the money received is forwarded to the American Red Cross Society. The remainder is to be applied to local anti-tuberculosis work, in accordance with the plans previously approved by the Red Cross.

Embezzlement Cases.

A motion made by the assistant prosecuting attorney to have vacated the bail of $6,000 granted each of the defendants in the case of the Government against F. P. Petersen and Charles Silvers for aiding and abetting an embezzlement, was overruled by Judge Owen on January 20. Sentence of one year imposed on Carlos Rodriguez, a Panamanian, for his connection with the same case, was suspended by Judge Gudger on January 23. Arguments in a motion made by defendant's counsel for the issuance of a certificate of probable cause in the case of H. J. Hines, who was sentenced to five years in connection with the above embezzlement, were heard on January 25.

Obituary.

Louis R. White, employed in the Atlantic Division, died on January 18, as the result of being struck by a Panama railroad train. His body was found near New Gatun station. He was 35 years of age, single, and had been on the Isthmus five years, coming here from Lexington, Ky.

Married.

JONES-McCOURT—On Christmas Day, at Culebra, Elizabeth Irene McCourt to Christopher George Jones, the Rev. Henry Collins officiating.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Empire, C. Z., on Sunday, January 29, 1911. The program follows:

1. March—*Victorious Phalanx*..............Morse
2. Selection—*Madame Sherry*..............Hoschna
3. Serenade—*La Paloma*..................Xradier
4. Overture—*Stradella* (By request).........Flotow
5. March—*Tannhauser*....................Wagner
6. Medley Selection—*My Southern Rose*..Von Tilzer
7. Waltz—*Wedding of the Winds*..............Hall
8. Selection—*Carmen*.......................Bizet
9. March—*Niebelungen*....................Moses

CHAS. E. JENNINGS, *Musical Director.*

The next concert will be given at Las Cascadas on Sunday, February 5, at 6 p. m.

BASEBALL.

PANAMA CANAL LEAGUE.

RESULTS OF GAMES, JANUARY 22.

At Ancon— Atlantics, 12; Marines, 1.
At Empire—Empire, 8; Ancon, 4.
At Colon— Co'missary-Subsistence, 10; Gorgona, 0.

STANDING OF CLUBS.

	P.	W.	L.	P.C.		P.	W.	L.	P.C.
Com-Sub.	5	5	0	1.000	Gorgona.	5	2	3	.400
Empire..	5	4	1	.800	Atlantics	5	1	4	.200
Ancon...	5	3	2	.600	Marines.	5	0	5	.000

SCHEDULE FOR JANUARY 29.

At Ancon— Ancon vs. Empire.
At Empire—Atlantics vs. Marines.
At Colon— Gorgona vs. Commissary-Subsistence.

SUMMARIES OF GAMES, JANUARY 22.

Marines.	AB.	H.	PO.	A.	E.	Atlantics	AB.	H.	PO.	A.	E.
McCabe,c..	4	0	13	1	2	Hennessy,ss	2	1	2	2	0
Maguire,1b	4	0	8	0	0	Gamble,1b.	5	3	11	0	1
Shepard,2b.	4	0	1	3	0	Herring,3b.	5	0	0	5	2
Guskie,ss..	3	1	0	1	2	Edwards,2b	5	2	3	1	1
McKel'y,cf.	4	1	0	0	0	Osborne,rf..	5	1	2	0	0
Field,3b...	2	0	0	2	0	Sullivan,cf..	5	2	1	0	0
Silke,rf....	4	0	1	0	0	Thompson,c	4	1	7	2	0
Burns,lf...	4	1	0	0	0	Kaufman,lf.	4	0	0	0	0
Munsen,p..	2	1	0	4	0	Davis,p....	4	1	1	4	0
Buckley,p..	1	0	0	0	0						
Totals...	32	4	*23	11	4	Totals...	39	11	27	14	4

Marines..........	0	1	0	0	0	0	0	0	0	—1
Atlantics.........	0	0	2	4	1	0	1	4	x	—12

Runs—Marines: McKelvey; Atlantics—Hennessy (3), Gamble, Herring (2), Edwards, Sullivan, Kaufman, Davis (3). Runs earned—Atlantics, 6. Two base hits—Edwards, Gamble, Sullivan. Stolen bases—Silke, Hennessy (2), Herring, Edwards, Osborne, Thompson, Kaufman, Davis (4). Bases on balls—Off Munsen, 4; off Buckley, 1; off Davis, 2. Struck out—By Munsen, 6; by Buckley, 5; by Davis, 7. Hit by pitcher—By Davis, Field; by Munsen, Davis. Left on bases—Marines, 5; Atlantics, 8. Double play—Davis to Gamble. Innings pitched—By Munsen, 5; by Buckley, 3. Umpire —Lawler. Time of game—2.00. Scorer—J. K. Munroe.

*Gamble out, attempted bunt on 3d strike.

Ancon.	AB.	H.	PO.	A.	E.	Empire.	AB.	H.	PO.	A.	E.
RDren'n,cf.	5	1	2	1	0	Bryan,3b...	3	1	0	4	1
CDren'n,rf.	4	1	1	0	0	Moore,c....	2	0	4	3	1
Tinsley,lf..	5	1	0	0	0	Markley,2b.	4	1	4	1	1
Smith,c....	5	1	6	2	0	Flubarty,rf.	3	1	2	0	0
Potter,2b..	2	1	3	2	0	Bell,1b.....	3	1	14	0	0
Nygren,1b.	2	0	8	2	0	Toone,ss...	1	0	1	1	1
Pearman,3b	2	1	1	0	1	VanZandt,lf	2	1	0	0	0
James, ss..	3	1	3	2	1	Murphy, cf.	4	2	1	0	0
Russell,p...	1	0	0	0	0	Marshall,p.	3	1	1	7	0
Hull,p.....	2	0	0	1	1						
Murray,p..	0	0	0	2	0						
Totals...	31	7	24	12	3	Totals...	25	8	27	16	4

Ancon.............	0	1	0	1	1	0	0	1	0	—4
Empire............	0	4	0	2	0	2	0	0	x	—8

Runs—Ancon: R. Drennan, Potter (2), Nygren; Empire: Bell, Toone (2), Van Zandt (3), Murphy, Marshall. Runs earned—Ancon, 3; Empire, 4. Two base hits—Pearman, James, Smith. Sacrifice hits—Nygren (2), James, Bryan, Toone. Stolen bases—Hull, Moore. Bases on balls—Off Hull, 3; off Russell, 4; off Murray, 1; off Marshall, 6. Struck out—By Hull, 2; by Murray, 3; by Marshall, 4. Hit by pitcher—By Marshall, Potter; by Hull, Van Zandt. Left on bases—Ancon, 9; Empire, 3. Umpire—Freel. Time of game—2.20 Scorer—Moeller. Attendance—474.

C.-S.	AB.	H.	PO.	A.	E.	Gorgona.	AB.	H.	PO.	A.	E.
Sullivan,lf.	4	0	0	0	0	Briggs,3b...	3	0	0	3	0
Breiv'gle,2b	3	1	0	1	0	Clements,ss.	3	0	0	2	2
Curtis,3b...	4	2	0	1	0	Barney,c...	3	0	12	3	1
Mosher,ss..	5	4	4	0	0	Wright,1b..	3	0	8	1	1
Guptil,1b..	4	1	5	1	0	Bailey,cf...	3	0	0	1	1
Coffin,rf...	3	0	2	0	0	Tretter,p...	3	0	0	1	1
Hodnett,c..	4	1	15	1	1	Calvert,lf...	3	0	0	0	1
Beard,cf...	4	1	0	0	0	Ridge,rf....	3	0	1	0	0
Kellogg,p..	4	2	1	3	0	Fullerton,2b	1	0	2	0	0
Totals...	35	12	27	7	1	Totals...	25	0	*23	11	7

Com.-Subsistence..	2	5	0	0	0	0	0	2	1	—10
Gorgona..........	0	0	0	0	0	0	0	0	0	— 0

*Guptil out for stepping out of batter's box.

Runs—C.-S.: Sullivan Breivogle (2), Curtis (3), Mosher (3), Kellogg. Runs earned—C.-S., 8. Two base hits—Curtis (2), Mosher (2), Kellogg. Sacrifice hit—Curtis. Stolen base—Breivogle. Bases on balls—Off Kellogg, 1; off Tretter, 1. Struck out—By Kellogg, 16; by Tretter, 10. Hit by pitcher—By Kellogg, 1; by Tretter, 2. Left on bases—C.-S., 6. Double play—Tretter to Wright to Barney. Passed balls—Hodnett, 1; Barney, 1. First base on errors—C.-S., 5; Gorgona, 1. Umpire—Irwin. Time of game—1.50. Scorer—J. P. Mead. Attendance—512.

The Atlantic second team would like to hear from all organized and picked baseball teams on the Isthmus. Address E. S. McSparran, Manager, Cristobal, C. Z.

A cable has been received advising that Bernard L. Kearney, formerly postmaster at San Pablo, who absconded on December 29, is returning to the Isthmus, in custody, on the *Abangarez*, due to arrive at Colon on January 26.

CANAL WORK IN DECEMBER.

Monthly Report of the Chairman and Chief Engineer to the Secretary of War.

CULEBRA, C. Z., January 16, 1910.

The Honorable the Secretary of War,
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of December, 1910:

Department of Construction and Engineering.

The following table summarizes the principal items of construction work accomplished by the Atlantic, Central and Pacific Divisions during the month:

ITEM.	Unit.	Atlantic.	Central.	Pacific.	Total.
Work excavation, dry	Cubic yards	72,030	1,387,749	29,101	1,488,880
Work excavation, wet	Cubic yards	482,370	21,132	455,715	959,217
Total work excavation	Cubic yards	554,400	1,408,881	484,816	2,448,097
Plant excavation, dry	Cubic yards	....	....	....	....
Plant excavation, wet	Cubic yards	155,109	....	....	155,109
Total Canal excavation	Cubic yards	709,509	1,408,881	484,816	2,603,206
Material placed in dams	Cubic yards	412,696	....	107,905	520,601
Concrete laid	Cubic yards	85,809	....	64,367	150,176
Explosives used	Tons (Gross)	59.43	192.18	21.79	273.40
Rock drilled	Feet	72,651	381,453	39,811	493,915
Tracks removed	Miles	....	5.60	....	5.60
New tracks laid	Miles	2.52	18.02	1.92	22.46
Rock crushed	Cubic yards	80,400	431	69,673	150,504
Cement used	Barrels	87,731	54	65,612	153,397
New roads built	Miles	0.29	....	1.21	1.50
Water mains laid	Feet	3,997	4,405	9,910	18,312
Sewers laid	Feet	620	124	25	769
New drains and ditches dug	Feet	....	....	2,282	2,282
Average daily force	....	8,046	8,752	4,270	21,068
Average rainfall	Inches	18.92	15.49	10.10	14.43

Atlantic Division.

GATUN LOCKS.

Excavation—Shovel excavation during the month was carried on in the lower chamber, and on a hill north of the machine shop. This hill is being excavated in order to furnish impervious material for the back fill south of the intermediate gate of the upper lock. A total of 76,741 cubic yards of material was removed. Of this quantity, 23,199 cubic yards were excavated for back fill. On December 31, the total material removed amounted to 5,577,910 cubic yards, of which 4,845,909 cubic yards had been removed from the Canal prism. The shovel excavation in the locks was 95 per cent completed, and the channel excavation in the lower chamber 33 per cent completed.

Back Fill—Back filling behind the walls of the upper lock was continued, a total of 49,344 cubic yards being placed during December, increasing the total to 194,128 cubic yards. On December 31, the back fill was 16.09 per cent completed.

Receiving and Issuing Material—The receipts of material during the month were satisfactory, and, with the exception of cement, exceeded the consumption.

Mixing and Placing Plants—These plants were kept in satisfactory operation during the month. Work with the auxiliary plant was partially suspended December 31, until the work in the lower chamber is sufficiently advanced to resume the dumping of concrete from cars.

Power Plant and Pumps—The operation of the power plant and pumps during the month was satisfactory. Power was produced at a lower figure than during any previous month.

Iron and Steel Work—During the month the setting of the sills for the lower gates of the upper lock in the east chamber was completed, and partially completed for the lower gates of the west chamber. The setting of the castings in the chamber of one Stoney gate valve on the west wall was completed, and the steel concreted in.

Concrete Work—There was an increase of 5,060 cubic yards in the amount of concrete laid, as compared with the figures for the preceding month. The daily average for the 26 working days was 3,085 cubic yards. The total amount of concrete placed during the month was 80,212 cubic yards, including 6,840¼ cubic yards of large stone. The place measurement exceeded the bucket measurement by 309¼ cubic yards. Of the total new concrete, 20,826½ cubic yards were placed in the upper lock, 59,361½ cubic yards in the middle lock, and 24 cubic yards in the lower lock. The concrete work in the upper lock was 80 per cent completed, and the concrete work for the entire lock system 48.1 per cent completed at the end of December.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS, GATUN LOCKS.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)	12.00	8.50
Average number of hours per day worked per strand of cableway laying concrete and large stone (actual working time)	7.34	....
Average number of mixers per day	6.00	2.00
Average hourly output per mixer, (actual working time) cu. yds.	59.12	77.36
Average amount of concrete and large stone laid per hour, per strand of cableway, (actual working time) cu. yds.	33.72	....
Large rock laid, cu. yds.	4,254½	2,586
Concrete laid, cableways, cu. yds.	48,859	....
Concrete laid, derrick, cu. yds.	454	....
Concrete laid, derrick, dumping and lift, cu. yds.	....	23,748
Concrete laid, portable ½-yard mixer	....	271
Total amount concrete and large rock laid, cu. yds.	53,567½	26,335

Concrete from the auxiliary plant is placed by derricks, dumping, and a lift. It is therefore impracticable to estimate the average amount placed per hour by each of these units.

GATUN DAM.

Construction during the month increased the total fill, as determined by cross sections of the material in place, by 412,696 cubic yards, making the total amount in place 11,332,655 cubic yards.

Hydraulic Fill—The dredges increased the hydraulic fill by 243,121 cubic yards. The total hydraulic fill in place December 31 was 5,777,235 cubic yards.

Dry Fill—The material received from the Central Division, the locks, the spillway and the plant excavation, amounting to 169,575 cubic yards was placed on the north and south toes of the dam, east and west of the spillway, making the total dry fill in place 5,555,420 cubic yards.

GATUN SPILLWAY.

Concrete—The construction of the east and west approach walls was continued, 5,597 cubic yards of concrete being placed, which increased the total to 113,268 cubic yards.

Excavation—The material excavated during the month amounted to 18,488 cubic yards, increasing the total spillway excavation to 1,565,489 cubic yards. Excavation for the foundation for the east wing of the dam was commenced December 23, most of the material being removed by hand and loaded into narrow gage cars with a crane.

HARBOR AND CHANNEL SECTION.

Excavation below Sea Level at Mindi—The dredge *Sandpiper* removed 147,346 cubic yards of earth from Mindi cut and then moved to mile post 6 plus 2,700 feet.

Dredging from the Ocean to Mindi—Five dredges removed 274,088 cubic yards of earth and 60,936 cubic yards of rock from the Canal prism. In addition, the dredge *Caribbean* removed 155,109 cubic yards of earth from the channel leading to Dock 14. On December 31st, 40 feet of water could be carried to zero plus 2,200 feet; 30 feet to mile 5 plus 2,000 feet; and 20 feet to mile 5 plus 2,550 feet, the end of the cut.

PORTO BELLO.

PERFORMANCE OF ROCK CRUSHER PLANT.

	Hours.
Length of working day—hours	12:00
Average number of hours worked per day	9:17
	Cu. Yds.
Average output per hour of working day	257
Average hourly output for possible working time of 280 hours and 24 minutes	286
Average output per working hour	333
Total for month	80,244
Maximum day's output	3,877

SAND, STONE AND CEMENT SERVICE.

In connection with this service, plant steamed 12,675 miles, handled 831 barges, and carried 2,337 passengers.

TORO POINT.

Colon Breakwater—At Toro Point, 44,758 cubic yards of material were excavated, of which amount 5,760 cubic yards were placed in track fill, and 38,998 cubic yards in breakwater fill. The double track trestle was extended 352 linear feet.

NOMBRE DE DIOS.

During the month, 87 barges containing 42,813 cubic yards of sand, were shipped to Gatun.

MUNICIPAL ENGINEERING.

The reservoirs, water mains, sewers, roads, and oil pipe lines were maintained and extended as required to facilitate construction work. Work was continued on the Colon municipal improvements.

Central Division.

During the month of December, the total amount of material excavated in the Central Division was 1,408,881 cubic yards, of which 399,883 cubic yards were classified as earth and 1,008,998 cubic yards as rock. Of this quantity, 1,386,753 cubic yards were removed by steam shovels, and 8,296 cubic yards were blasted and washed away. Contractors removed 11,840 cubic yards by sluicing, 996 cubic yards by hand, and 996 cubic yards by blasting and washing away. Of the total, 1,408,881 cubic yards consisted of primary excavation for the Canal prism.

The daily average number of steam shovels at work during the month was 45.58 and the total number of shovel days was 1,185, as compared with 49.13 shovels at work during the month of November, with 1,179 working days.

For comparison with the work done by steam shovels during the corresponding month of the previous year, the following table has been prepared:

Period.	Excavated by shovels.	Classification of material.		Av. No. of shovels at work.	W'kg days.	Av. yards per shovel day.
		Rock.	Earth.			
1909:	Cu. Yds.	Cu. Yds.	Cu. Yds.			C. Y.
Dec.	1,250,357	1,005,088	245,269	43.15	26	1,114.6
1910:						
Dec.	1,386,753	1,008,998	377,755	45.58	25	1,170.3

Rainfall at Empire: 1909, 9.44 ins.; 1910, 9.06 ins.

The above table shows the average output per shovel to be five per cent greater in December, 1910, than in the corresponding month of the previous year.

The total amount of material excavated from the prism in the Culebra section of the Central Division in December, 1910—1,211,400 cubic yards—was the highest record in that section for the month of December, the previous high record for the month having been in December, 1908, when 1,210,046 cubic yards were removed.

The total estimated amount of material to be removed in the Central Division was 97,125,018 cubic yards, and up to January 1, 1911, 67,792,855 cubic yards had been removed, leaving 29,332,163 cubic yards to be removed in order to complete all excavation in the Central Division. From these figures it will be seen that 69.70 per cent of all excavation in the Central Division had been completed up to the close of the month of December and 30.30 per cent remained uncompleted.

Considering the two sections which compose the Central Division, the excavation completed and that to be completed at the close of December operations, was as follows:

CULEBRA SECTION.

	Cubic Yards.
Completed	56,905,933
To be completed	27,280,791

CHAGRES SECTION.

Completed	10,886,922
To be completed	2,051,372

From the above figures it will be seen that the Culebra section, locally known as the Culebra Cut, was 67.60 per cent completed, with 32.40 per cent to be completed; the Chagres section was 83.97 per cent completed, with 16.03 per cent to be completed.

During the month, 12,330 cubic yards of material were hauled from the Canal prism and dumped in the embankment for the roadbed of the relocated Panama railroad in the vicinity of Pedro Miguel, and 2,596 cubic yards in the vicinity of Frijoles. The total amount of spoil from the Central Division used for this purpose at the close of the month was 3,733,174 cubic yards. The Central Division also delivered at Gatun 137,905 cubic yards of rock and earth for use in the construction of the dam, making the total for this purpose at the end of December 2,505,557 cubic yards.

The daily average number of laborers at work on the whole division during the month was 7,858, and the daily average number of gold employes 894.

Pacific Division.

DISTRICT NO. 1—LOCKS AND DAMS.

The total excavation during the month amounted to 29,101 cubic yards. During December, no dry filling was added to the prism of the west dam at Pedro Miguel, the total amount of material in place at the close of the month remaining at 260,852 cubic yards, as previously reported. The back fill at Pedro Miguel was increased by 7,989 cubic yards, the total in place at the end of the month amounting to 30,087 cubic yards.

At Miraflores, 39,224 cubic yards were added to the dry fill in the toes, and 66,681 cubic yards to the hydraulic fill in the core of the west dam, making the totals at the end of the month 609,863 cubic yards and 294,712 cubic yards, respectively. No material was added to the back fill, leaving the total amount in place at the end of the month 133,545 cubic yards.

PEDRO MIGUEL LOCKS.

The excavation at the south end of the center wall was completed, and excavation was resumed at the center wall in the forebay. Concrete laying was commenced on the west side wall of the forebay, and track was laid for back filling the west wall.

The concrete work at Pedro Miguel for December showed a decrease of 21,414 cubic yards over the figures for November. The total amount placed was 42,384 cubic yards, including 262 cubic yards of large stone. The concrete was placed as follows: 14,692 cubic yards in the east wall; 432 cubic yards in the west head wall; 12,349 cubic yards in the center wall; 11,635 cubic yards in the west wall; 754 cubic yards in the floor; and 2,972 cubic yards in the sills.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT PEDRO MIGUEL.

	Permanent Plant.	Auxiliary Plant.
Length of working day, (one day of 12 hours) hours	8.00	8.00
Average number of hours per day worked laying concrete and large stone (actual working time)	4.90	4.77
Average number of mixers per day	3.58	2.42
Average hourly output per mixer (actual working time)	Cu. Yds. 72.07	Cu. Yds. 41.28
Average amount of concrete and large stone laid per hour, per chamber crane (actual working time)	66.55	....
Large rock laid	211.00	51.00
Concrete laid	30,810.00	11,762.00
Total concrete laid	30,021.00	11,813.00

Average number of cranes and derricks per day placing—2.88.

MIRAFLORES UPPER LOCK.

Work on the west storage trestle at Miraflores was continued during the month. The total of concrete and large stone laid was 21,533 cubic yards, as compared with 23,871 cubic yards during November. The concrete was placed as follows: 14,965 cubic yards in the east wall; 2,319 cubic yards in the center wall, and 4,249 cubic yards in the floors.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT MIRAFLORES.

	Permanent Plant.	Auxiliary Plant.
Length of working day, (one day of 12 hours) hours	8.00	8.00
Average number of hours per day worked laying concrete and large stone (actual working time)	7.05	6.12
Average number of mixers per day	....	6.15
Average hourly output per mixer (actual working time)	Cu. Yds.	Cu. Yds. 12.77
Average amount of concrete and large stone laid per hour per berm crane (actual working time)	56.67	....
Large rock laid	204.00	234.00
Concrete laid	10,184.00	10,911.00
Total concrete laid	10,388.00	11,145.00

Auxiliary mixing plant consists of two 2-yard mixers, five ⅓-yard mixers, and one ¼-yard mixer.

Auxiliary placing plant consists of one locomotive and dump car in service six days, and five small mixers dumping directly into form, averaging 4.15 mixers per day.

Permanent plant consists of one berm crane operating one boom only, on placing.

DISTRICT NO. 2—DREDGING.

The following is a statement of the output of the five dredges which were in operation during the month, and of the amount of material excavated hydraulically:

DREDGE.	Type.	WORK.		PLANT.		Total.	Remarks.
		Earth.	Rock.	Earth.	Rock.		
		Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds,	Cu. Yds.	
Cardenas	Dipper	22,312	....	....	....	22,312	Place measurement
Marmot	Ladder	....	....	219,795	....	219,795	Place measurement
Mole.	Ladder	17,007	3,900	....	....	20,907	Place measurement
Badger	Ladder	63,641	....	....	....	63,641	Place measurement
Culebra	Suction	280,174	....	....	....	280,174	Scow measurement
Total	....	383,134	3,900	219,795	....	606,829	
Hydraulic excavation	....	*68,681	....	....	....	68,681	Place measurement
Grand Total	....	451,815	3,900	219,795	....	675,510	

*Excavated from lower lock site at Miraflores.

CHAMÉ SAND EXCAVATION.

Approximately 48,100 cubic yards of sand were excavated at Punta Chamé and delivered at Balboa.

HYDRAULIC EXCAVATION PLANT.

The work of the hydraulic excavation plant was continued during the month in the lower lock site, and completed to within the barrier between the upper and lower lock sites. The plant was moved southward. Work was continued on the coffer dam immediately in front of the central pumping station.

DISTRICT NO. 3—MUNICIPAL AND SANITARY IMPROVEMENTS.

The reservoirs, water mains, sewers, and oil pipe lines were maintained, and work was continued on the municipal improvements in the city of Panama.

DISTRICT NO. 4—ANCON QUARRY.

PERFORMANCE OF ROCK CRUSHER PLANT.

	Hours.
Length of working day	12:00
Average number of hours per day (actual working time)	8:89
	Cu. Yds.
Average amount crushed per hour of working day	223.31
Average amount crushed per working hour	301.35
Total output for the month	69,673

To supply the increasing demands for crushed stone, the crushers were operated

12 hours per day during the entire month. The screenings produced amounted to 2,648 cubic yards.

Relocation of Panama Railroad.

During the month, 238,410 cubic yards of material were excavated, making the total amount at the close of the month 5,257,767 cubic yards, and 271,230 cubic yards of material were placed in embankment, making a total of 10,613,608 cubic yards for this purpose.

For comparison with the work done by steam shovels during the preceding month, and during the corresponding month of the previous year, the following table has been prepared:

Period.	Excavated by Shovels.	Classification of material.		Av. No. of shovels at work.	W'kg days.	Av. yards per shovel day.
		Rock.	Earth.			
1909:	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*			
Dec.....	162,115	107,139	54,976	8.26	26	755
1910:						
Nov....	227,510	125,265	102,245	6.00	24	1,580
Dec.....	233,720	132,380	101,340	6.00	26	1,498

During the month, 442 linear feet of temporary trestle were driven. No permanent track was laid during December. The total force averaged 1,472 men.

Quartermaster's Department.

Labor—A large number of boilermakers and machinists were recruited and brought to the Isthmus during December. No unskilled labor was recruited.

Materials and Supplies—Requisitions for emergency dam machinery, Stoney valves, lock gate recess covers, locomotives and track material were forwarded during the month to the amount of $4,841,999. Stock requisitions and requisitions for material covered by annual contract were the smallest placed so far during the fiscal year.

Supplies during the month were received in 31 vessels, with cargo aggregating 33,434 tons. In addition, 3,060,428 feet, board measure, of lumber, 46,665 linear feet of piling, and 38,568 cross-ties were received. The value of all material received was $947,622.26.

Subsistence Department.

The operation of the European laborers' messes, the colored laborers' kitchens, and the line hotels showed a net profit of $860.85; the operation of the Hotel Tivoli showed a net profit of $804.33, and there was a net profit on restaurants and penitentiary of $217.46. The net profit on subsistence operations was $1,882.64.

The earnings of the Hotel Tivoli, though apparently small, were satisfactory, the sum of $1,546.60 having been charged against the hotel for renewal of table linen, mirrors, desks, carpet, stair treads, runners, etc. There was also a charge of $215.89 for the screening of porches, and for changing equipment in the kitchen to provide for *a la carte* service.

Department of Civil Administration.

COURTS.

Three civil and 25 criminal cases were disposed of in the Circuit Courts of the Canal Zone; and 74 civil and 544 criminal cases in the District Courts.

DIVISION OF POSTS, CUSTOMS AND REVENUES.

Money order sales for December amounted to $472,889.69, and the fees to $2,201.86. Receipts from card and stamp sales, and newspaper postage aggregated $8,959.65. The total collection of revenues made by the division was $57,144.91, and the collection on account of court fines, costs and fees, $2,228.50.

Twenty-one vessels entered at and 22 vessels cleared from the port of Ancon; and 24 vessels entered at and 23 vessels cleared from the port of Cristobal.

DIVISION OF POLICE AND PRISONS.

The total number of persons arrested was 545, of whom 511 were men and 34 women. Forty-four nationalities were represented. The total number of arrests for the month was an increase of 74 over November. Five convicts were committed to the penitentiary and nine were discharged, leaving 149 in confinement at the close of the month. The cost of guarding and subsisting the convicts was $2,545.31, and the value of their work on the Canal Zone roads $2,193.95.

DIVISION OF FIRE PROTECTION.

Fifteen fires were reported in the Canal Zone during the month, the damage to the Commission property being $111.23, and to Panama railroad property $190.

DIVISION OF PUBLIC WORKS.

In the city of Panama the average daily consumption of water was 1,211,595 gallons, and in Colon, 1,016,652 gallons.

The usual inspection and maintenance work of this division was performed during the month.

DIVISION OF SCHOOLS.

The total enrollment in the white schools during the month was 1,023, and the average daily attendance, 865, or 84 per cent of the enrollment; and in the colored schools the total enrollment was 893, and the average daily attendance, 528, or 59 per cent. Thirty-eight white and 24 colored teachers were employed in the division on December 31.

Department of Sanitation.

The total number of deaths from all causes among employes was 44. These were divided, as follows: From disease, 32, and from violence, 12, giving the annual average per thousand of 10.91 for all causes. Dividing the causes of death into disease and violence, an annual average per thousand of 7.94 and 2.97, respectively, is shown for the month.

The annual average death rate per thousand among employes for the month of December in previous years since American occupation was, as follows:

1904	19.44
1905	43.73
1906	30.27
1907	18.11
1908	25.03
1909	13.84

The annual average death rate per thousand in the cities of Panama, Colon, and the Canal Zone, including both employes and civil population, was 25.16

The annual average death rate per thousand for the month of December among the same class of population for previous years was, as follows:

1904	44.75
1905	58.78
1906	39.21
1907	23.50
1908	26.15
1909	21.50

Segregating the whites from the blacks, the annual average death rate per thousand from disease among employes was for whites 5.59, blacks, 8.79, giving a general average of 7.94. For the same month during 1908, the annual average death rate per thousand from disease was whites, 9.85, blacks, 14.05, giving a general average of 12.81; and for the same month during 1909, whites, 8.39; blacks, 10.67, giving a general average of 10.13.

Among employes during December, 1910, deaths from the principal diseases were as follows: Nephritis, 6; lobar pneumonia, 7; malaria fever, E. A., 2; haemoglobinuric fever, 1; tuberculosis of the lungs, 4; organic disease of the heart, 2; leaving a balance of 10 deaths from all other diseases, and 12 deaths from external violence.

No cases of yellow fever, smallpox, or plague were brought to, or originated on the Isthmus, during the month.

Respectfully,
Geo. W. Goethals,
Chairman and Chief Engineer.

Missing Men.

Any one having information regarding the whereabouts of William Clise, who is supposed to be on the Isthmus of Panama, is requested to communicate with his sister, Mrs. Emma Goodwich, 16 Carlyle street, Battle Creek, Mich.

Any one having information regarding the whereabouts of Earl Bown, an electrician, who is supposed to have come to the Isthmus some time in September, 1910, from Atlanta, Ga., is requested to communicate with The Canal Record.

Any one having information regarding the whereabouts of Walter Jennings, who is supposed to be on the Isthmus of Panama, is requested to communicate with The Canal Record.

Any one having information regarding the whereabouts of Wm. E. Daugherty, who is supposed to be on the Isthmus of Panama, is requested to communicate with Walter Bray, Paraiso, C. Z.

Any one having information regarding the whereabouts of Ed. O'Neil, who is supposed to be on the Isthmus, will please communicate with Jos. L. Donahue, Gorgona, C. Z.

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the week ending January 21, follows:

Date.	Hours worked.	Cubic Yards.
January 16	8:21	3,351
January 17	6:21	2,880
January 18	8:17	3,416
January 19	7:20	3,191
January 20	7:33	3,599
January 21	7:06	3,205
Total	44.58	19,642

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending February 1, 1911: (75th meridian time):

Date.	High.	Low.	High.	Low.
	A. M.	A. M	P. M.	P. M.
January 26	12.40	7.10	1.40	7.35
January 27	1.38	8.00	2.25	8.25
January 28	2.25	8.45	3.05	9.10
January 29	3.08	9.27	3.40	9.43
January 30	3.45	10.05	4.15	10.25
January 31	4.25	10.40	4.50	11.00
February 1	5.00	11.20	5.25	11.40

The following vessels arrived at and departed from the port of Balboa during the week ending January 21, 1911:

Arrivals—January 14, *Henry Villard*, and *Riverside* from San Francisco; January 16, *Ecuador*, from Guayaquil; January 17, *Ucayali*, from Callao; January 20, *Aysen*, from Valparaiso.

Departures—January 16, *Peru* (P.S.N.Co.), to Callao; January 18, *Strathtay*, to Puget Sound; January 19, *Acapulco*, to San Francisco.

OFFICIAL CIRCULARS.

Leave for Hourly and Monthly Employes.

CULEBRA, C. Z., January 1, 1911.

CIRCULAR No. 297-B (Superseding CIRCULARS Nos. 297 and 297-A):

1. By direction of the President of the United States, hourly employes on the gold roll of the Isthmian Canal Commission and of the Panama Railroad Company, who are not accustomed to a tropical climate, will be allowed four weeks' leave with pay for each year's continuous satisfactory service after January 1, 1911.

2. This leave will be computed as 28 consecutive days of eight hours each, to be at the rate of pay per hour received at the time leave is taken.

3. Employes, who have rendered satisfactory service for six months or longer subsequent to January 1, 1911, who resign or who are discharged, except when services are terminated for cause, will be granted leave on account of such service at the rate of two and one-third days for each full month, total not to exceed 56 days; but no leave will be granted to an employe who resigns, or is discharged after less than six months' service.

4. In computing leave earned by service in both 1910 and 1911, or on both the hourly and monthly rolls, the following rules will govern:

(*a*) Leave will be due any time after 10 months' continuous service, computing the leave as if the employe had served a full year of 12 months.

(*b*) For each full month on the hourly gold roll in 1910, count one and one-sixth days' leave.

For each full month on the hourly gold roll in 1911, and subsequently, count two and one-third days' leave.

For each full month on the monthly gold roll, count three and one-half days' leave.

(*c*) In these cases if the employe elects to accumulate any portion of his leave it must be two weeks, or a multiple of two weeks.

(*d*) It should be noted that only American citizens are entitled to leave for service on the hourly gold roll in 1910, but for service after 1910 citizenship is not considered.

5. No leave will be computed on a fraction of a month. When computation of leave results in a fraction of a day, a half day, or over, will count as one day. No credit will be given for less than a half day.

6. Two, four, or six weeks of any leave due may be left to accumulate, to be taken on termination of service, or to be added to the next leave due the employe, provided that not more than 56 days may be taken on termination of service, and not more than 42 days for the regular leave. Leave not taken in conformity with this rule will be forfeited.

7. Leave without pay may be taken in conjunction with leave with pay, provided the total does not exceed 42 days.

8. Leave is not a vested right; it must be taken at the convenience of the department or division when the employe can be spared with least prejudice to the work. Except in the case of employes who resign or are discharged, leave must be taken in a country affording the necessary change of climate, and compensation for the leave period will not be paid until the first pay period after the employe returns to the Isthmus and reports for duty. Employes not reporting for duty within 15 days after the expiration of their leave will forfeit the right to pay for the leave period and may be discharged.

9. Time lost by an hourly employe on account of leave without pay in excess of 30 days in one service year, suspensions for discipline, furloughs, absence from duty on account of illness, or injury in excess of a total of 60 days in one service year, will not be credited as service entitling an employe to leave with pay.

10. The new service year of an employe will date from the completion of 12 months' continuous service, exclusive of above deductions.

11. When leave is due an employe, and he has given notification of his intention to accumulate same, he shall not be deprived of such leave thereafter, regardless of the reason for termination of service.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Labor and Material Surcharges.

CULEBRA, C. Z., January 18, 1911.

CIRCULAR No. 169-E (Superseding previous CIRCULARS):

Effective January 1, 1911, the following surcharges will be added in all cases when labor is furnished between departments and divisions, and where labor and material are furnished between the Isthmian Canal Commission, the Panama Railroad Company and the Government of the Canal Zone, and to individuals and companies:

BETWEEN DEPARTMENTS AND DIVISIONS OF THE ISTHMIAN CANAL COMMISSION, AND BETWEEN THE ISTHMIAN CANAL COMMISSION, THE PANAMA RAILROAD COMPANY, AND THE GOVERNMENT OF THE CANAL ZONE.

Shop work—The shop expense percentage fixed for the shop in which the work is performed will be added to the distributed labor. The percentage for each shop will be fixed from time to time by this office.

All other labor without machinery—Ten per cent on labor.

Material—No surcharge will be added to material, except that furnished to the Government of the Canal Zone, to which 15 per cent will be added, whether sold or used in repair work. No surcharge will be added to sand and stone produced by the Isthmian Canal Commission, and these two materials will be invoiced at storage pile prices.

FOR INDIVIDUALS AND COMPANIES.

Shop work—Seventy-five per cent on labor and 20 per cent on material used.

All other labor without machinery—Twenty per cent on labor.

Material with or without labor, including sand and stone—Twenty per cent on material.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Working Hours in Wireless Stations.

CULEBRA, C. Z., January 17, 1911.

HEADS OF DEPARTMENTS AND DIVISIONS:

I am in receipt of the following communication, dated January 13, 1911, from Captain R. M. Gibson, U. S. M. C.:

"I have to inform you that the Secretary of the Navy has this day authorized the suspension of the present schedule of working hours for the wireless stations.

"In future messages may be sent at any time, all stations working for the common welfare and prevention of interference."

GEO. W. GOETHALS, *Chairman.*

Monthly Reports on Manufacturing.

CULEBRA, C. Z., January 19, 1911.

CIRCULAR No. 264-A:

1. Paragraphs 3 and 4 of report on manufacturing account, approved in Circular No. 264, are modified as follows, to take effect January 1, 1911:

Each manufacturing and repair shop will submit to this office on form 222 C. E. a report showing for each month the cost of the labor and material used in each job or in each class of work of which the cost is kept as a unit.

2. All material and labor will be divided into two classes, viz.: Distributed and undistributed.

DISTRIBUTED LABOR.

The time of each artisan and helper while actually employed directly on a job, or on a class of work the cost of which is kept as a unit, will be charged thereto. The time of a foreman will be distributed only when he supervises continuously the labor on one particular job, or on one class of work the cost of which is kept as a unit, such as the foreman of the foundry at Gorgona, a foreman engaged exclusively in making repairs to steam shovels outside of the shops, etc.

The time of yard gangs, crews of locomotives and locomotive cranes, crews of boats transporting material and men, crane operators, etc., will be distributed only when an accurate record is kept of the amount of time spent on each job, or on each class of work the cost of which is kept as a unit.

UNDISTRIBUTED LABOR.

All other labor will be charged to the proper subhead under shop expense.

DISTRIBUTED MATERIAL.

All material of which at least a portion thereof forms part of the completed job will be charged directly thereto.

The cost of tools, templets, dies, fixtures, jigs, etc., will be charged directly to a job only when of such special character that they cannot be used on any other work.

Patterns will be charged to the cost of castings.

UNDISTRIBUTED MATERIAL.

The cost of all other material will be charged to proper subhead under shop expense.

3. Shop expense will be divided into superintendence and other expenses.

The shop expense for each month will be summarized on form 222 C. E., under the following subheads, viz.:

SUPERINTENDENCE.

Supervision.
Clerks.
Office maintenance and supplies.

OTHER EXPENSES.

New machines, tools, buildings and yards.
Repairs to machines, tools, buildings and yards.
Gratuity time.
Vacation, sick, injury and transit time.
Power and light.
All other undistributed labor and material.

The cost of labor, material, and charges from other departments and divisions, and the total, will be given for each of the above items. The grand total of all items will constitute the shop expense.

The total distributed labor, the shop expense, and the percentum which the shop expense is of the distributed labor, will be shown below the summary.

4. The Examiner of Accounts will keep a debit and credit account of the shop expense of each shop, and will submit quarterly to this office a report showing the balance and character thereof.

The shop expense percentage which each shop will apply to all work done therein, whether manufacturing or repair, will be announced from time to time from this office, and will be changed as may be necessary to keep the balance of the shop expense account a minimum.

The last month during which a shop operates, the shop expense percentage will be fixed so as to reduce the balance to zero.

5. The estimated cost given on the work request (form 159 C. E.) will be entered on form 222 C. E. until the job is completed. When a job is finished the word "Completed" and the total cost, including shop expense, will be entered after the item in the column of "Remarks" on form 222 C. E. for that month.

The cost of overtime on all repairs, the cost of overtime on all manufactures, and the total for each shop, will be entered on the last sheet of form 222 C. E. for the month.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

No Surcharge on P. R. R. Invoices.

CULEBRA, C. Z., January 20, 1911.

HEADS OF DEPARTMENTS AND DIVISIONS:

Effective January 1, an agreement was entered into with the Panama Railroad Company whereby the Commission will handle all material required by that company for a stated monthly consideration. Invoices rendered for material sold to, or used in repairs for the Panama Railroad Company after said date should carry no surcharge.

GEO. W. GOETHALS, *Chairman.*

Annual Rainfall for Three Years.

STATION.	1908	1909	1910	Station Average	Whole Years of Record.	Rai'y days 1910
Pacific Sec.–	*Ins.*	*Ins.*	*Ins.*	*Ins.*		
Ancon...	59.99	83.91	75.78	71.67	13	219
Balboa...	56.71	93.06	75.30	71.06	12	211
Miraflores	....	119.53	102.57	105.13	2	214
P. Miguel	77.45	110.57	96.36	94.80	3	223
R. Grande	83.17	107.86	104.15	92.23	6	233
Central Sec.–						
Culebra..	77.45	102.34	103.37	90.95	20	236
Camacho.	88.87	116.31	117.48	99.73	4	265
Empire..	71.72	97.15	90.66	84.49	6	236
Gamboa.	77.51	122.11	115.99	93.79	28	262
Alhajuela	105.26	152.04	131.01	107.14	11	257
El Vigia.	....	147.61	126.01	128.57	2	249
Gorgona.	....	....	111.34	102.24	6	229
San Pablo	79.74	118.95	133.34	108.68	3	280
Tabernilla	89.95	131.08	126.64	113.74	3	286
Bohio....	118.98	151.69	160.54	132.99	16	295
Trinidad.	108 49	147.81	154.05	136.79	3	313
M. Lirio.	129.72	153.39	179.73	150.89	3	344
Atlantic Sec-						
Gatun...	119.33	164.19	156.21	140.55	6	296
Brazos B.	143.76	170.50	155.19	145.91	4	300
Cristobal.	137.71	183.41	149.94	130.03	40	277
P. Bello..	....	237.28	170.12	178.67	3	295

Rainfall from January 1 to 21, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	.39	15	.76
Balboa	.28	1	.37
*Miraflores	.23	16	.27
Pedro Miguel	.03	11	.03
Rio Grande	.01	**	.02
Central Section—			
Culebra	.01	**	.02
*Camacho	.00	....	.00
Empire	.00	....	.00
Gamboa	.03	1	.05
*Juan Mina	.04	12	.04
Alhajuela	.02	††	.04
*El Vigia	.03	12	.03
*Gorgona	.20	1	.26
San Pablo	.27	16	.52
Tabernilla	.04	1	.07
Bohio	.16	11	.24
Atlantic Section—			
Gatun	.15	3	.60
*Brazos Brook	.19	12	.38
Cristobal	.14	††	.55
Porto Bello	.11	‡	†.45
*Nombre de Dios	.20	14	.54

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

†To 5 p. m. January 20.

**1st and 12th. ††11th and 12th. ‡5th and 13th.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

STATISTICAL REPORT FOR DECEMBER.

Total membership	1,976
Total number of bowling games	7,641
Number different tournaments	14
Total number tournament players	215
Total number pool and billiard games	18,531
Total income from soda fountains	$2,808.95
Number different men using gymnasiums	248
Total attendance of men using gymnasiums	1,373
Number enrolled in chess and checker clubs	61
Number enrolled in glee clubs	70
Number enrolled in dramatic and minstrel clubs	80
Number enrolled in camera clubs	72
Number enrolled in orchestras	8
Number enrolled in Bible clubs	10
Number enrolled in educational classes	43
Number of members of libraries	767
Total number of books withdrawn	2,461
Number of religious meetings	15
Attendance	584
Number of lectures	2
Attendance	48
Number of local entertainments	25
Attendance	5,909
Number functions outside association management	11
Attendance	1,260
Number afternoons for women	41
Attendance	294
Number evening functions to which women invited	28
Attendance	2,464
Number different men on committees	315
Number of men called on in hospitals	324
Number of letters written at public tables	7,341
Total attendance at buildings	73,115
Average attendance per day	2,128
Number of beds used during the month	597

BOYS' DEPARTMENT.

Number of members	81
Number of afternoons for boys	66
Average attendance per afternoon	56
Total attendance in systematic gymnasium work	730
Outings and other special features	2

CULEBRA.

The second handicap billiard tournament was finished last week with the following scores:

Name.	Handicap.	Won.	Lost.
Case	45	7	3
French	55	7	3
Conlan	100	6	4
Hepler	45	6	4
Bayne	100	5	5
Hall	45	5	5
Silver	81	5	5
Soderberg	45	5	5
Thompson	86	5	5
Clark	45	2	8
Dubois	100	2	8

In the play-off of the tie for first place, Mr. Case won. Mr. Conlan made the best single average, 2.27; also the best run, 33 points.

The regular monthly social at the clubhouse on Friday evening, January 20, attracted a large attendance.

Interest in the simultaneous chess tournament held on Tuesday evening was keen. Mr. C. M. Wilson met six opponents—Messrs. Stearns, Warner, Dubois, Bartlett, Goodenow, and Putnam—and broke even, winning three and losing three. Mr. Stearns will meet all comers in the next simultaneous match on Tuesday evening, January 30.

The first session of the topic club will be held on Wednesday evening, January 24. This session was postponed from January 17. H. F. French will lead the discussion.

The 200, or over, scores on the bowling alley for the week ending January 21 are, as follows: Case, 201, 201, 208; Huttlemeier, 209, 202.

There will be a motion picture entertainment at the clubhouse on Friday evening, January 27. Members, free; nonmembers, 25 cents; children, 15 cents. The entertainment will begin at 8.15 sharp.

EMPIRE.

On account of the large number of entries in the December pool tournament, the finals have just been played, H. M. Pearson winning first place, and R. A. Fullinwider, second.

A meeting of the camera club was held on January 23 for the purpose of reorganization. Plans were made for outings and other events, announcement of which will be given in the near future.

A "smoker" to which all the men of Empire are invited will be held on Wednesday evening, February 1.

The following high scores were made last week: Duckpins—Rhodghiero, 100; Parkis, 100; Fisher, 100; Reimann, 101. Bigpins—Danielson, 202; Gustavson, 208; Koperski, 216.

The glee club will resume rehearsals on Saturday evening.

The last game of the Isthmian Bowling League was played between Gatun and Empire on the Empire alleys, Saturday night, January 21. Gatun took two out of three games. This gives Empire the championship, with 19 games won and five lost, a percentage of 792, which is a new record. Following are the scores:

Gatun.				Empire.			
Severn	177	155	207	Gustavson	204	164	175
Wolf	172	155	131	Goolsby	168	144	140
DeMoll	175	166	175	Bardelson	154	126	198
Harrington	165	158	133	Pearson	187	180	157
Barte	212	181	153	Huson	183	179	137
Total	901	815	799	Total	896	793	807

GATUN.

Three new members were added to the gymnasium class during the week beginning January 16.

The glee club rehearsal was omitted on January 19, but from now on will be held every Thursday night. The club now numbers 20.

CRISTOBAL.

Last week the track and jumping pit were placed in good condition for those who wish to train for the track and field meet at Empire. The regular practice nights for coaching will be Mondays and Thursdays. Those wishing to may use the track at any time.

The closing games of the bowling league were bowled Saturday night between Culebra and Cristobal. The score was as follows:

Culebra.				Cristobal.			
Herrington	188	165	133	Barrett	167	161	152
Mengel	165	148	132	Weston	156	127	137
Hayes, G. C.	166	187	198	Rabbitt	186	180	138
Huttlemeier	116	127	137	Burns	119	133	185
Dougherty	167	211	149	Bullard	148	170	169
Total	802	838	749	Total	776	771	781

Friday night, January 27, a moving picture entertainment will be given.

On Wednesday night, the "Life Problem" Club will be started, and will take up the following topics: "Problems of a livelihood," "Problems of social and family relationships," "Problems of physical temptations," and "Problems of service." Each topic is subdivided into six heads, and two will be handled each evening. The first two for Wednesday night were "The value of work," and "The choice of a life work."

Regular indoor baseball practice will begin this week.

COROZAL.

The enlarged clubhouse was formally opened to the public on Tuesday evening, January 24. It will be operated under the management of the Y. M. C. A., like the other Commission clubhouses in the Zone. Colonel W. C. Gorgas presided at the opening exercises, which included vocal and instrumental music and addresses by Major H. A. Brown, Mr. Maurice H. Thatcher, and Mr. F. C. Freeman. The clubhouse contains privileges for members similar to those provided in the other clubhouses.

Geo. R. D. Kramer, Jr., formerly assistant secretary at Culebra, has been promoted to the position of sectary. All white gold employes of the I. C. C. and P. R. R. are eligible for membership.

PORTO BELLO.

A Spanish class has been organized with 20 members. Mr. Quail, the sanitary officer, is to act as instructor. The class will meet on Tuesday and Wednesday nights at 7.30.

Thursday night, the discussion club had its second meeting in the study of life problems. "Preparation for," and "Rewards of a life work" were the topics discussed.

Friday night, a large crowd enjoyed a moving picture show at the clubhouse. Five thousand feet of film were exhibited.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, January 21, 1911. All heights are in feet above mean sea level.

DAY AND DATE	STATION.				
	Vigia.	Alhajuala	Gamboa.	Bohlo.	Gatun Lake.
Sun. Jan. 15	126.4	93.0	45.9	14.0	14.0
Mon. Jan. 16	126.3	92.9	45.8	13.9	13.9
Tues. Jan. 17	126.3	92.8	45.8	13.8	13.8
Wed. Jan. 18	126.3	92.8	45.7	13.8	13.8
Thurs. Jan. 19	126.2	92.8	45.7	13.7	13.7
Fri. Jan. 20	126.2	92.8	45.7	13.6	13.6
Sat. Jam. 21	126.2	92.8	45.6	13.6	13.6
Height of low water	125.0	92.0	46.0		

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL

Advance	P. R. R.	Saturday	Jan. 21
Panama	P. R. R.	Saturday	Jan. 28
Allianca	P. R. R.	Saturday	Feb. 4
Colon	P. R. R.	Friday	Feb. 10
Advance	P. R. R.	Thursday	Feb. 16
Panama	P. R. R.	Thursday	Feb. 23
Allianca	P. R. R.	Wednesday	Mar. 1
Colon	P. R. R.	Tuesday	Mar. 7
Advance	P. R. R.	Monday	Mar. 13
Panama	P. R. R.	Saturday	Mar. 18
Allianca	P. R. R.	Friday	Mar. 24

CRISTOBAL TO NEW YORK.

Colon	P. R. R.	Sunday	Jan. 29
Ancon	P. R. R.	Sunday	Jan. 29
Advance	P. R. R.	Friday	Feb. 3
Panama	P. R. R.	Friday	Feb. 10
Allianca	P. R. R.	Thursday	Feb. 16
Colon	P. R. R.	Wednesday	Feb. 22
Advance	P. R. R.	Tuesday	Feb. 28
Panama	P. R. R.	Tuesday	Mar. 7
Allianca	P. R. R.	Monday	Mar. 13
Colon	P. R. R.	Sunday	Mar. 19
Advance	P. R. R.	Saturday	Mar. 25
Panama	P. R. R.	Friday	Mar. 31

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 11th and 28th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Santa Marta	U. F. C.	Thursday	Jan. 19
Magdalena	R. M	Saturday	Jan. 21
Metapan	U. F. C.	Thursday	Jan. 26
Prinz Joachim	H.-A	Saturday	Jan. 28
Zacapa	U. F. C.	Thursday	Feb. 2
Orotava	R. M	Saturday	Feb. 4
Sibiria	H.-A	Saturday	Feb. 4
Almirante	U. F. C.	Thursday	Feb. 9
Prinz Aug. Wilhelm	H.-A	Saturday	Feb. 11
Santa Marta	U. F. C.	Thursday	Feb 16
Thames	R. M	Saturday	Feb 18
Sarnia	H.-A	Saturday	Feb. 18
Metapan	U. F. C.	Thursday	Feb. 23

COLON TO NEW YORK.

Almirante	U. F. C.	Thursday	Jan. 26
Prinz Aug. Wilhelm	H.-A	Tuesday	Jan. 31
Santa Marta	U. F. C.	Thursday	Feb. 2
Thames	R. M.	Monday	Feb. 6
Sarnia	H.-A	Tuesday	Feb. 7
Metapan	U. F. C.	Thursday	Feb. 9
Prinz Joachim	H.-A	Wednesday	Feb. 14
Zacapa	U. F. C.	Thursday	Feb. 16
Tagus	R. M	Monday	Feb. 20
Sibiria	H.-A	Tuesday	Feb. 21
Almirante	U. F. C.	Thursday	Feb. 23
Prinz Aug. Wilhelm	H.-A	Tuesday	Feb. 28

NEW ORLEANS TO COLON.

Parismina	U. F. C.	Wednesday	Jan. 18
Abangarez	U. F. C.	Saturday	Jan. 21
Heredia	U. F. C.	Wednesday	Jan. 25
Atenas	U. F. C.	Saturday	Jan. 28
Cartago	U. F. C.	Wednesday	Feb. 1
Turrialba	U. F. C.	Saturday	Feb. 4
Parismina	U. F. C.	Wednesday	Feb. 8

COLON TO NEW ORLEANS.

Turrialba	U. F. C.	Thursday	Jan. 26
Parismina	U. F. C.	Thursday	Jan. 26
Abangarez	U. F. C.	Thursday	Feb. 12
Heredia	U. F. C.	Thursday	Feb. 12
Atenas	U. F. C.	Thursday	Feb. 19
Cartago	U. F. C.	Thursday	Feb. 19

COLON TO BARBADOS, CALLING AT TRINIDAD.

Magdalena	R. M	Tuesday	Jan. 31
Orotava	R. M	Tuesday	Feb, 14

The next sailing of the Leyland Line will be as follows: William Cliff on or about January 28, for New Orleans via Kingston, Ja.

Hamburg-American steamers leave for New York every Tuesday at 10 a. m.; for Jamaica every fortnight, connecting there with steamers for all points in Cuba; for Port Limon every Tuesday, direct, or by way of Bocas del Toro.

Royal Mail steamers leave for New York on alternate Mondays at 5 p. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursday at 3 p. m.; for New Orleans via Port Limon and Puerto Barrios on Thursday at 6 p. m., and for New York on Thursday at 11 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3d and 20th of each month

CANAL RECORD

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NOTES OF PROGRESS.

Dismantling Berm Crane at Pedro Miguel.

Concrete operations at the Pedro Miguel Locks have reached the point where the output of only one of the two berm cranes can be used advantageously. The two auxiliary mixers, one each on the east and west storage trestles, are supplying concrete for the extension of the side walls of the locks north, and the output of one berm crane is sufficient for the operations at the south end of the locks, in addition to furnishing material for the extension of the center wall north, which was begun a few days ago. The work of dismantling berm crane "G" was begun by the contractors, the McClintic-Marshall Construction Company of Pittsburg, on Monday, January 30, and the removal of the electrical material, which is being done by the Pacific Division, on the previous day. The two 150-foot cantilever arms on the crane will be transferred at once to the two berm cranes in service at Miraflores, one to each crane, which, with the installation of the mixing machinery, will equip them for effective service.

Work on Gold Hill Section of P. R. R. Relocation.

A part of the excavation for the roadbed of the Panama railroad relocated line between Paraiso Junction and Gamboa, passing back of Gold Hill, will be done by contract. This comprises a section of the road opposite Las Cascadas, extending from station 1461 + 30 to station 1537, a distance of about one and one-half miles. The contract for the work, which will be performed on the task plan, has been awarded to J. B. Hull at 57 cents a cubic yard. There were six bidders in all, and the figures submitted by them ranged from 34 cents to 71 cents a cubic yard. Another section was also advertised to be let to private contractor, viz., that between stations Nos. 1580 and 1700, opposite the town of Empire, but it was subsequently determined, that a passing track and station grounds would be laid out at that point, and, therefore, the grading could be handled to better advantage by steam shovels.

The last section of the relocation, between Paraiso Junction and Gamboa, about 9¼ miles long, on which operations have been delayed pending a decision as to a departure from the original plan of constructing the roadbed through Culebra Cut along a berm on the east bank, has been surveyed and cleared. Work on the roadbed is in progress at both ends, and the construction of culverts has been begun. There are three large cuts to be made, and several heavy embankment fills, although none of the latter approximate in size some of the fills on the line between Gatun and Monte Lirio. A considerable part of the material in these cuts is rock, and its excavation will be accomplished by steam shovels. The road will cross the Obispo diversion, the only stream of size in this locality, by means of a triple 10 x 10 box culvert, made of reinforced concrete. It is expected that the Gold Hill section of the line will be ready for traffic in the early part of 1912.

Seismograph Station at Gatun.

A seismograph station will be established on the island of Guarapo in Gatun Lake for the purpose of obtaining more detailed information with reference to the directions and distances of seismic disturbances. With one station, only approximate directions and distances can be obtained, while with two, a much more correct determination of the probable foci of disturbances is possible. A station for seismological observations is now maintained at Ancon, where there are four instruments of the Bosch-Omori type; two 100 kg. machines and two 25 kg. machines. Two of these instruments will be used to equip the new station at Gatun, for which a suitable building and foundation will be provided.

Experimental Laboratory and Kitchen.

A chemical laboratory and experimental kitchen has been built for the Subsistence Department. It is situated directly back of buildings Nos. 1 and 2 on Cristobal Point, and is connected with the offices of the Subsistence Department in building No. 2 by a covered passageway.

The laboratory is equipped with the necessary apparatus for making tests of groceries, provisions, and other supplies sold at the commissaries, and a sample of every new shipment received will be analyzed, catalogued and placed away for future reference. The purpose of these tests is not only to guard against the acceptance of goods, which are inferior in quality to the samples submitted by the successful bidders, but also to secure an accurate and complete analysis record which will be of value in placing future orders.

An expert chemist is in charge of the laboratory. In addition to inspecting food supplies, pronouncing on the quality and texture of cloth goods, etc., he will guard against the inroads of boiler scale, and flue and ammonia gas troubles in the engine rooms at the manufacturing plants, which, it is expected, will result in a considerable yearly saving in the cost of maintenance. Another of his duties will be to look after and verify weights and measures.

New Fire Station at Mount Hope.

A fire station is being erected at Mount Hope, near the cemetery entrance. It will be of the same size as the stations at Bas Obispo and Balboa, with one room below for the hose reel and accessories, and living quarters above for the fireman in charge. At the present time, the quarters for the fireman stationed at Mount Hope are in the quartermaster's depot, but this arrangement has proved inadequate. The new building will make 17 fire stations within the jurisdiction of the Canal Zone Fire Department. There are paid departments at seven of these stations, and a paid fireman and volunteer companies at nine. There are also volunteer companies at Matachin, Miraflores, San Pablo, and Toro Point, but no regular buildings have been provided at those places.

Assistant Purchasing Agent, New Orleans.

Col. George B. Davis, assistant purchasing agent, has been relieved from duty at New Orleans, and the duties heretofore performed by him, pertaining to both the Isthmian Canal Commission and the Panama Railroad Company in that city, were taken over by Capt. Frank H. Lawton, Subsistence Department, U. S. A., effective January 18, 1911.

Telephone Improvements.

The old style magneto telephone switchboard at Mount Hope has been replaced by a new Western Electric common battery private branch exchange switchboard, known as type No. 101. The magneto, or bell-ringing instruments, formerly in use, have been removed, and telephones of the common battery type installed in their place. The new board is equipped for furnishing service to 30 subscribers, and is connected with the main exchange at Cristobal by trunk lines. Power for the batteries is also supplied from the Cristobal exchange, by means of a line recently strung to Mount Hope, consisting of an old No. 00 wire taken down in Colon.

Service tests, in connection with the operation of the railroad company's system, are now regularly conducted. These are made with a view of determining: (1) The time consumed by the operator in making a connection, and (2) The time elapsed before the subscriber answers. A recent test in Cristobal showed an elapsed time of three seconds in the first, and of 3.50 seconds, in the second instance. A traffic manager was appointed a short time ago, whose duties consist in looking after and remedying defects in service. Chief operators have been engaged for the exchanges at Cristobal and Empire, to supervise the serv-

NOTES OF PROGRESS.

(Continued.)

ice. and the work of the operators, at those points.

The construction force on the permanent telephone line along the Panama railroad relocation is now at work between Caimito and New Frijoles, and as soon as this section is completed, it will start the building of the line between Gatun and Monte Lirio. It is expected that by the time the latter section is finished, the railroad fills between Monte Lirio and New Frijoles will have been so far completed that the telephone line can be located and the work begun there. Old steel rails, 28 feet long, are used for poles. They are set in concrete bases, the amount of concrete in the bases varying according to the character of the ground, the swampy sections requiring heavier foundations than where the land is high and easily drained. The concrete base has been a valuable adjunct in iron pole construction on the Isthmus. It has served not only to prevent rusting, but the pole stands up under a greater strain, and, through wet, marshy places, it has obviated an expensive system of bracing.

Gatun Dam Spillway.

Concrete was placed in the spillway of Gatun Dam during the week ending January 28, as follows:

Date.	Concrete laid.	Hours worked.	No. Mixers.
	Cu. Yds.		
January 23	78	6:00	1
January 24	96	7:00	1
January 25	90	6:30	1
January 26	64	5:30	1
January 27	90	7:00	1
January 28	114	8:00	1
Total	532	40:00	1

Central Division Unloaders in December.

Location.	No. of unloaders.	No. of trains.	No. of cars.
Balboa	3	920	18,400
Miraflores	3	670	13,400
Gamboa	4	963	19,260
Total	10	2,553	51,060

Additional Police Station Facilities.

A subpolice station and jail will be established at Golden Green, the native settlement in the outskirts of Empire, and an unused building belonging to the police department, situated at Cerro near the Lirio planing mill, where a post was formerly maintained, will be moved to the site at Golden Green, which is on Panama railroad land.

A new substation will also be established at New Gatun, in the vicinity of the public market, and a building, 16 by 22 feet in size, similar to the police station at West Culebra, will be erected by the Constructing Quartermaster. The populous part of the village is over one-half mile distant from the Gatun police station, and a temporary place of detention has been regarded as necessary on account of the difficulty of marching prisoners over the path along the Panama railroad track, the only means of communication by pedestrians between the two sections of the town.

An additional cell will be provided at the Ancon jail by curtailing the dormitory space formerly allotted to the colored police officers on the first floor. It will be used for confining colored prisoners, and will be considerably larger than the other two cells in the building.

Postal Business and Canal Zone Revenues.

The report of the Director of Posts for the month of December shows that 21,748 money orders were issued, amounting to $473.032.41, an increase of $38,126.86 over November. Of the $473,032.41 issued in December, the sum of $372,049.57 was drawn payable in the United States, $100,512.34 in orders payable in the Canal Zone, and $470.50 in orders payable in Martinique. The fees collected amounted to $2,201.91, and the amount paid and repaid during the month was $128,256.31.

Postal sales during the month amounted to $8,956, and newspaper postage amounted to $2.67.

The revenue collections for the month were as follows:

Distillation licenses	$256.54
Motor vebicle licenses	215.00
Liquor licenses for remaining balf of fiscal year, 56 saloons	33,600.00
Taxes, licenses, etc	11,911.86
Total	$45,983.40

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

About 52 per cent of the concrete for the system of three twin locks at Gatun has been laid, the exact amount in place at the close of work on January 28, being 1,069,795 cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending January 28, and of the total follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
January 23	2,290	45:08	8	594	8:40	2	223¾	3,107¾
January 24	2,022	27:15	6	432	8:40	2	129½	2,583½
January 25	2,134	35:29	6	692	9:40	2	150¾	2,976¾
January 26	2,182	40:32	6	674	9:40	2	202	3,058
January 27	2,152	35:32	6	648	8:40	2	179¾	2,979¾
January 28	2,052	37:35	6	640	8:40	2	182	2,874
*Portable mixers				492½				492½
Total	12,832	220.51	6.33	4,172½	54.40	2	1,067¾	18,072¼
Previously reported								1,051,723½
Grand total								1,069,795¾

*The 492½ yards shown for the portable mixers were placed on the following days: January 23d, 18 yards; January 24th, 71½ yards; January 25th, 83½ yards; January 26th, 99½ yards; January 27tb, 115½ yards; January 28th' 104½ yards. Of this amount, 173 yards were reinforced concrete.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is about 62 per cent completed, 518,512 cubic yards, out of a total of 837,400, having been placed at the close of work on January 28. The record for each of the six 8-hour working days of last week, follows:

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant. 2-cubic yard mixers.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
January 23	1,562	16:50	3	236	7:50	1		1,798
January 24	1,526	17:00	3	168	5:00	1		1,694
January 25	1,756	20:00	3					1,756
January 26	1,712	20:00	3	142	4:00	2		1,854
January 27	1,764	19:67	3	266	6:50	1		2,030
January 28	1,768	23:00	4	244	6:00	2	7	2,019
Total	10,088	116:17	3.17	1,056	29:00	1.4	7	11,151
Previously reported							4,118	507,361
Grand total							4,125	518,512

MIRAFLORES LOCKS.

About nine per cent of the concrete for the system of locks at Miraflores was in place on January 28, the total amount on that date being 118,950 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

Date.	Auxiliary Plant.										Total.
	2-cubic yard mixers.			½-cubic yard mixers.			¼-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds*	*Cu. Yds.*
Jan. 23	580	14:50	2	404	26:00	4				20	1,004
Jan. 24	488	13:75	2	539	26:50	4	34	4:00	1	15	1,076
Jan. 25	308	6 50	2	411	30:50	5	53	3:00	1		772
Jan. 26	502	10:50	2	309	21:50	4	112	7:00	1		923
Jan. 27	484	9:50	2	383	26:33	4	102	7:00	1	8	989
Jan. 28	520	10:00	2	485	32:50	4	78	7:00	1		1,095
Total	2,882	64:75	2	2,531	163:33	4.17	379	28:00	1	43	5,859
Previously reported										2,872	113,091
Grand total										2,915	118,950

STEAM SHOVEL RECORDS.

Work of Central Division in December.

During the month of December, the total amount of material excavated in the Central Division was 1,408,881 cubic yards, of which 399,883 cubic yards were classified as earth, and 1,008,998 cubic yards as rock. Of this quantity, 1,386,753 cubic yards were removed by steam shovels, and 8,296 cubic yards were blasted and washed away. Contractors removed 11,840 cubic yards by sluicing, 996 cubic yards by hand, and 996 cubic yards were blasted and washed away.

The high record of the month was made by shovel No. 205, working 26 days in the Culebra district, which excavated 51,001 cubic yards of rock. The second best record for the month was made by shovel No. 204, working 24 days in the Culebra district, which excavated 45,410 cubic yards of rock.

The best record for a shovel of the 70-ton class was made by shovel No. 111, working 26 days in the Chagres district, which excavated 27,807 cubic yards of earth.

Shovel No. 204, working in the Culebra district, made a high record for one day by excavating 3,249 cubic yards of rock and earth on December 24. Shovel No. 132, working in the Chagres district, excavated 2,100 cubic yards of earth on December 12, this being the high record for one day for shovels of the 70-ton class.

Except where noted, monthly reports are computed by place measurement, while daily reports are based on car measurement. The best records for the month and for one day are shown below:

BEST RECORDS FOR THE MONTH.

CHAGRES DISTRICT.

Shovel No.	Cubic Yards.			
	Earth.	Rock.	Total.	No. of days at work.
111	27,807	....	27,807	26
132	23,141	....	23,141	24
EMPIRE DISTRICT.				
258	....	38,548	38,548	25
229	....	33,816	33,816	26
209	....	31,904	31,904	26
CULEBRA DISTRICT.				
205	....	51,001	51,001	26
204	18,164	27,246	45,410	24
217	6,444	36,518	42,962	25
PEDRO MIGUEL.				
231	27,205	9,070	36,275	25

BEST RECORDS FOR ONE DAY.

Shovel.	Location.	Date.	Character of material excavated.	Cubic yards.
132	Chagres*	Dec. 12	Earth	2,100
111	Chagres*	Dec. 10	Earth	1,900
111	Chagres*	Dec. 9	Earth	1,820
201	Empire	Dec. 7	Rock	2,400
201	Empire	Dec. 6	Rock	2,326
209	Empire	Dec. 28	Rock	2,254
262	Empire	Dec. 24	Rock and earth	2,223
258	Empire	Dec. 17	Rock	2,204
204	Culebra	Dec. 24	Rock and earth	3,249
214	Culebra	Dec. 30	Rock	3,230
204	Culebra	Dec. 20	Rock and earth	3,135
204	Culebra	Dec. 21	Rock and earth	3,040
256	Culebra	Dec. 5	Rock and earth	2,812
227	Culebra	Dec. 6	Rock	2,717
214	Culebra	Dec. 15	Rock	2,717
231	Pedro Miguel.	Dec. 8	Rock	1,957
231	Pedro Miguel.	Dec. 9	Rock	1,900
231	Pedro Miguel.	Dec. 10	Rock	1,900
231	Pedro Miguel.	Dec. 12	Rock	1,900

*70-ton class.

The townsite of Spanishtown at Paraiso has been extended by the addition of block No. 6, of 13 lots, each 50 by 100 feet. This addition was made necessary in order to take care of the buildings transferred from other lots at Spanishtown, through which a cut is being made by the Panama Railroad Company.

Leave for Hourly Employes.

Circular No. 297-B, published in THE CANAL RECORD of January 25, covers rules only for hourly employes and is not intended to apply to monthly employes, except when part of the service of the employe is on the hourly roll and part on the monthly roll, as noted in paragraph 4. The balance of the Circular refers solely to hourly employes, and it should have appeared under the above caption.

Ancon Crusher.

A report of the rock crushed at Ancon quarry during the week ending January 21, follows:

Date.	Hours worked.	Cubic Yards.
January 16	10:15	3,226
January 17	9:45	2,601
January 18	5:40	1,854
January 19	10:35	3,459
January 20	10:20	3,131
January 21	8:25	2,880
Total	55:00	17,151

The Panama Government has advised the Sanitary Department of an outbreak of cattle plague in the Pacora valley, and at Chepo, Republic of Panama, requesting its aid in making an investigation of the disease.

Obituary.

L. H. Alleman, an American employed in the Central Division, died at Ancon Hospital on January 25, as the result of injuries received in falling down a 50-foot embankment at San Pablo on January 24. He was 48 years of age, married, and had been on the Isthmus two years.

A. C. Logan, employed by the Panama Railroad Company at Colon, died at Colon Hospital on January 28, after an illness of about two months. He was 50 years of age, married, and had been on the Isthmus four years. He is survived by his wife, who lives in Chicago, Ill.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, January 28, 1911. All heights are in feet above mean sea level.

Day and Date	Station.				
	Vigia.	Alhajuala	Gamboa.	Bohio.	Gatun Lake.
Sun. Jan. 22	126.2	92.7	45.6	13.6	13.6
Mon. Jan. 23	126.2	92.8	45.6	13.6	13.6
Tues. Jan. 24	126.4	92.9	45.8	13.5	13.5
Wed. Jan. 25	126.3	92.8	45.8	13.5	13.5
Thurs. Jan. 26	126.1	92.7	45.6	13.4	13.4
Fri. Jan. 27	126.6	92.8	45.5	13.3	13.3
Sat. Jan. 28	126.6	92.8	46.0	13.3	13.3
Height of low water	125.0	92.0	46.0		

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending February 8, 1911 (75th meridian time):

Date.	Low.	High.	Low.	High.
	A. M.	A. M.	A. M.	P. M.
February 2	......	5.40	11.55	6.00
			P. M.	
February 3	12.20	6.15	12.35	6.40
February 4	1.00	6.55	1.15	7.20
February 5	1.43	7.40	2.00	8.05
February 6	2.30	8.25	2.45	8.50
February 7	3.23	9.20	3.42	9.50
February 8	4.25	10.27	4.50	11.00

EXECUTIVE ORDERS.

Authority to Use French Dump Cars—Increased Panama Duties.

Under authority vested in me by law, it is ordered:

The Isthmian Canal Commission is hereby authorized to use six-meter French dump cars for the purpose of obtaining gravel from the bed of the Chagres River until July 1, 1911, without equipping such cars with the various safety appliances required by the provisions of Executive Order No. 1002, dated January 6, 1909. WM. H. TAFT.

THE WHITE HOUSE,
January 16, 1911.
[No. 1285.]

WASHINGTON, D. C., January 9, 1911.

CIRCULAR NO. 45:

The following order of the Secretary of War is published for the information of all concerned:

WAR DEPARTMENT,
WASHINGTON, January 5, 1911.

ORDERS:

1. By direction of the President, it is ordered that the first proviso of section 1 of the order issued by the Secretary of War, by direction of the President, on December 3, 1904, which was promulgated in Circular No. 4, Isthmian Canal Commission, December 30, 1904, be amended to read as follows:

"*Provided, however,* That this order shall cease to be operative—

"First. If the Republic of Panama should at any time increase the rate of duty on imported articles described in class 2 of the act of the National Convention of Panama passed July 5, 1904, and effective October 12, 1904, above 15 per centum ad valorem, provided for in said act; or if the said Republic should increase at any time the rates of duty on the imported articles described in the other schedules of said act, except on all forms of imported wines, liquors, alcohols, and opium, upon which the Republic may fix higher rates.

"Second. If Article Thirty-eight of the Constitution of the Republic of Panama, as modified by Article One hundred and forty-six thereof, is repealed or modified at any time insofar as the importation and sale of all kinds of merchandise are concerned.

"Third. If the consular fees and charges of the Republic of Panama, in respect to the entry of all vessels and importations into the said ports of Colon and Panama, are increased beyond the rates now in force, which rates are understood to be 60 per centum of the rates in force prior to the promulgation of said order of December 3, 1904; or

"Fourth. If goods imported into the ports of Colon and Panama, consigned to, or designated for any port in the Canal Zone, are at any time subjected in the Republic of Panama to any other direct or indirect impost or tax whatever."

2. Paragraph 3 of the order issued by the Secretary of War, by direction of the President, on January 7, 1905, which contemplates the exclusion from the benefits of the commissaries established and maintained by the Canal Commission of all employes and workmen who are natives of tropical countries is hereby revoked. J. M. DICKINSON,
Secretary of War.

F. C. BOGGS,
Captain, Corps of Engineers, U. S. Army,
Chief of Office.

SOCIAL LIFE OF THE ZONE.

Women's Clubs.

At the meeting of the Paraiso Woman's Club on Wednesday, January 25, two standing committees were created in order to facilitate the work of the organization; a committee on civics, with Mrs. W. E. Ellenwood as chairman, and a committee on entertainment, with Mrs. H. G. Bain, chairman. The duty of this latter committee will be to arrange dates and details for all entertainments given by the club. It is expected that the club will hold a dance early in February.

The social meeting of the Pedro Miguel Woman's Club was held at the home of Mrs. Ernest Bitely on Wednesday afternoon, January 25. Mrs. Mark White has issued invitations for the clubwomen, with their husbands, to meet at her home in Ancon, on Saturday evening, February 11. A special train will bring the guests to Ancon and return.

The Gatun Woman's Club held a social meeting at the clubhouse on Friday afternoon, January 27. A feature of the program was a charade contest, prizes being awarded. Refreshments were served. The club has resumed its weekly meetings, and these are well attended.

The Empire Woman's Club has changed its meeting day from the second and fourth Thursdays to the first and third Thursdays in each month. The next meeting will be held on Thursday, February 2, at the clubhouse; each member is entitled to bring one guest. The meeting will be social, and refreshments will be served. It is expected that hereafter the meetings of the club will be held at the homes of members by invitation. Any member can learn the place of meeting from the clubhouse secretary. Guests are always cordially welcomed.

Miscellaneous Events.

The Pacific Dancing Club held a dance at Paraiso hall on Saturday evening, January 28.

The board of governors of the University Club has decided that the first Saturday night of each month shall be observed in a special manner. On the night of February 4, Dr. John Stuart, an Oxford graduate, professor of English at the Panama National Institute, will speak on the "Physiograph of the Isthmus." There will also be music and refreshments. The dance planned for the night of February 21, has been indefinitely postponed.

Church Notes.

The Rt. Rev. Albion W. Knight, Bishop of Cuba, sailed for Cuba by the way of Jamaica on Tuesday, January 24, after a visit of 23 days. This is the third visit Bishop Knight has made to the Panama mission of the Protestant Episcopal Church, and the number of persons confirmed by him exceeded that of any previous visitation.

On Sunday, January 29, two bishops of the Anglican Church visited Colon, in transit for Kingston, the Rt. Rev. John Welch, Bishop of Trinidad, and the Rt. Rev. Edward Hutson, Bishop of Antigua. They were accompanied by Canon Tree of Trinidad. The Bishop of Antigua preached at Christ Church at the morning service, and the Bishop of Trinidad in the evening.

Delta Tau Delta.

Members of the Delta Tau Delta college fraternity, who are on the Isthmus, effected an organization at a dinner at the Gatun hotel on Wednesday evening, January 3. The object is to hold occasional dinners, and to welcome other members of the society who may come to the Isthmus. Seven members of the fraternity from five different schools were present at the Gatun dinner. Any other members on the Isthmus are requested to communicate with C. C. Carr, Gatun.

Gatun Playground Association.

A meeting of the residents of Gatun called by the Gatun Woman's Club, was held at the Commission clubhouse on Saturday evening, January 21, for the purpose of considering the advisability of establishing a public playground and athletic field in the village. Invitations had been sent to the local fraternal societies, the Kangaroos, Odd Fellows, and Knights of Pythias, all of which showed their interest by sending delegates. There were present besides, a number of representative townspeople. Mrs. V. V. Sessions, president of the woman's club presided, and outlined the plans as tentatively arranged by the woman's club, assisted by Mr. C. C. Carr, principal of the Gatun high school. It was decided to form an association to be known as the "Gatun Playground Association," and officers were elected as follows: President, C. C. Carr; vice-president, Mrs. E. S. Waid; secretary, R. M. Sands; treasurer, Mrs. V. V. Sessions. Four permanent committees were appointed, with the following chairmen: Finance, Frank Gardner Smith; grounds, W. C. Gayer; publicity, J. H. Stevenson; equipment, A. O. Ludwig.

At a second meeting of the association, held on Friday evening, January 27, it was decided to separate the project into two parts, as there is not a suitable site to combine the playground and athletic field within the town limits, and to direct first efforts toward establishing the playground. The site selected is next the schoolhouse. The work of grading and preparing the ground will be begun at once. The association will hold a meeting every Friday evening at the clubhouse.

Electrical Workers.

THE CANAL RECORD—

There has been a question raised as to the standing of Local Union 677, I. B. E. W., of Gatun. The letter below will remove all doubt: it is an answer to a letter of inquiry by Mr. Clarence King. N. L. LEVY.

Gatun, C. Z., January 6, 1911.

American Federation of Labor.
Washington, D. C., December 13, 1910.

Mr. Clarence L. King,
Cristobal, C. Z., Panama,
Electrical Department.

Dear Sir:

Replying to your favor of the 3d instant, I beg to advise that the International Brotherhood of Electrical Workers, chartered and recognized by the American Federation of Labor, is that of which Mr. F. J. McNulty is president, and Mr. Peter W. Collins is the secretary.

Yours very truly,
FRANK MORRISON,
Secretary, American Federation of Labor.

Local Union 677 meets twice a month, on the second Sunday at 2 p. m., and the fourth Wednesday at 8 p. m. On January 11, the following officers were installed: President, F. J. Sweek; vice-president, B. R. Grier; financial secretary, N. L. Levy; recording secretary, A. M. Horle; treasurer, A. W. Wollnaugh; foreman, F. C. Mezger; first inspector, A. Whiston; second inspector, R. R. Hale; trustees, J. A. Hess, J. I. Porter, R. R. Hale.

The next regular meeting of Local No. 214, O. B. E. W., will be held on Sunday, February 5, at 1.30 p. m., at Ancon hall. All members are requested to be present.

Hamburg-American Passenger Accommodations.

The agent at Colon of the Hamburg-American Line announces, that during the months of February and March, no second class passengers will be taken on the steamships *Prinz Joachim* and *Prinz August Wilhelm*, between Colon and New York. A limited number of second class passengers will, however, be be taken to Kingston. Second class passage to New York will be available by the steamships *Sarnia* and *Sibiria*, the whole of the cabin accommodations on these steamers being sold as second class.

Married.

FYFFE-FROST—At Trinity Church, Cincinnati, Ohio, on January 12, 1911, Nellie B. Frost to James P. Fyffe, Dr. S. A. Aultman officiating. Canal Zone residence, Ancon.

CANFIELD-SMART—At Ancon Hospital, at 6 p. m., Sunday, January 29, 1911, Ethelwyn M. Smart of Woking, England, to Herman Canfield, Judge H. A. Gudger officiating. Canal Zone residence, Ancon.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Las Cascadas, C. Z., on Sunday, February 5, 1911 at 6 p. m. The program follows:

1 March—*National Emblem*................Bagley
2 Selection—*The Golden Girl*..............Howard
3 Caprice—*The Whistler and His Dog*........Pryor
4 Overture—*Semiramide*..................Rossini
5 Waltz—*Tres Jolie*...................Waldteufel
6 Medley Selection—*My Southern Rose*..Von Tilzer
7 Flower Song—*Hearts and Flowers*.........Tobani
8 Intermezzo—*Silver Bell*................Wenrich
9 March—*Hudson-Fulton Celebration*
..................Arranged by S Jorge A.

CHAS. E. JENNINGS, *Musical Director.*

The next concert will be given at Cristobal on Wednesday evening, February 8, at 8 o'clock.

Misdirected Letters.

ANCON, C. Z., January 30, 1911.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received in the office of the Director of Posts and may be had upon request of the addressee:

LETTERS UNCALLED FOR JANUARY 21, 1911.

Adams, W. O.
Ardila, Frederico
Ballon, Capt. Tomas
Bell, Andrew Lane
Berry, E. W.
Bianchi, Louis
Blake, Beresford |]
Born, William
Buther, Miss ——
Campbell, John
De Pew, Jasper H.
Denst, Leonard
Dentz, William J. N., or Udentz, William J.
Evans, Florence
Fedek, Lamciu
Fields, Robt.
Gem Aerated Wtr. Ftry.
Grier, B. R.
Howard, R. C.
Hirsb, S. J. (Hush)
Jackman, Ethelbert
Jewel, S. S.
Johns, Carl or Karl
Keenan Thos. J.
Moore, Levy L.
Pendry, Mrs. C. A.
Picket, James (care Mr. Smith)
Pronger, Norman W.
Seten, R. E.
Smith Frank G.
Stanley, H. Wood
Suiller, L. E.
Tabers, Mrs. Juan
Treiber, J. C.
Whipple, Mrs. Earl
Wonson, or Honson, Miss Katherine

LETTERS UNCALLED FOR JANUARY 30, 1911.

Bell, Josiah
Bower, Wilton
Briggs, Ray M.
Cadot, Gabriel
Christensen, C. K. (n)
Clarke, George
Cooper, Gilbert K.
Costin, H. S.
Drake, Miss Marian
Dyer, Septimus
Edwards, A. S.
Francis, Louise
Francis, Charles
Fleming, John
Fulton, Ernest
Gale, H. M.
Gaillot, A. G. (n)
Harrod, Mrs. Ida
Howe, Chas. H.
Jones, H. B.
Kelly, W. E.
Martin, John
Mahon, John
Merrowitz, E.
Meleegan, John
Miessina, Lyons
Morales, Eduardo V.
Morris, R. K.
O'Donnell, A.
Penny, H. H.
Rands, Joe
Rice, C. J. (or I. J.)
Ross, Walter G. (or Koss)
Ryle, E. C.
Schwabb, Geo.
Seffers, A. M. (n)
Simonson, Carl
Stone, Isaac E.
Swain, Llewellyn
Weizel, E. R. (or Werzel)
Wilson, S. (H. A. 1c U. S. Navy)
Woodsum, Miss Edith
Whitehead, W. W.

COCOLI LAKE PUMPING PLANT

Additional Facilities to be Installed to Increase Pressure in Ancon and Panama.

Additional equipment will be installed at the Cocoli Lake pumping plant to increase the water pressure in the 16-inch main which supplies Ancon and Panama. The situation will be temporarily relieved by the installation of a 12-inch pump, formerly in service at the sump in the Pedro Miguel Locks, but it will be substituted as soon as possible by a new 10-inch, 3-stage centrifugal pump of 250-horsepower, with a capacity of 2,000 gallons per minute operating against a 300-foot head. The present equipment consists of two 80-horsepower pumps, and these will either be held in reserve for an emergency, or used again in the rainy season, in order to operate the treating plant, as circumstances may require. The new 10-inch pump, when installed, will pump the water from the lake to the 16-inch Rio Grande main direct, without the use of the present settling tank arrangement. The chemical solution will be injected into the 10-inch discharge line and the water filtered before entering the 16-inch Rio Grande main, provided the two filters in the basement of the Miraflores power house prove satisfactory. Otherwise, they, together with the chemical solution, will be omitted, and the water treated and filtered at Ancon only, instead of being treated and filtered at Miraflores and again at Ancon, as at present. In this case, Balboa and Corozal would be served with the raw water from both Cocoli and Rio Grande, passing through the 16-inch main. In case it is found necessary, a special arrangement will be made for providing those places with filtered water for drinking purposes. A curtailment of the drain on the Rio Grande, main will be effected by the installation of a pump, with a minimum capacity of 650 gallons per minute operating against a 50-foot head, on one of the banks of the Pedro Miguel River, near the railroad culvert, to supply a water tank for locomotives, situated near the Pedro Miguel shops. Hitherto, the water for the tank has been drawn through a 4-inch branch line extending from the Rio Grande main, and the daily consumption has been about 600,000 gallons. The dry season flow in the Pedro Miguel River is equivalent to about 10,000,000 gallons per day, so an abundant supply for the tank is assured.

The water pressure in Ancon and Panama varies from six to 50 pounds per square inch. The low pressure occurs when the pumps at Cocoli Lake are closed down for any purpose, while the high pressure develops in the night time when there is a greatly decreased consumption. The average pressure in Panama is 20 pounds to the square inch when the Cocoli pumps are supplying 700 gallons per minute to the Rio Grande main under a pressure of 70 pounds per square inch, which represents about one-third of the water used, south of Miraflores. The installation of the new 10-inch pump will, it is believed, deliver 2,400,000 gallons of water daily to the Rio Grande main at a pressure of 100 pounds to the square inch, which will give an average pressure of 40 pounds to the square inch in Panama, providing the city water system is not extended beyond its present limits.

The water elevation in the Rio Grande reservoir is 238 feet, and the theoretical storage is 490,000,000 gallons, of which 377,000,000 gallons represents the so-called usable supply. The daily outflow at the intakes is now about 4,900,000 gallons per day, including 900,000 gallons drawn off by the Cucaracha pumping plant, and this would indicate a 77 days' supply. The dry season records at this reservoir during the past four years are shown in the following table:

Dry Season.					Theoretical capacity, gallons.	Actual consumption, gallons.	Daily consumption, gallons.	Excess.	
Date began.	Elev. feet.	Date closed.	Elev. feet.	No. of days.				Gallons.	Per cent.
Jan. 1, 1907.	232	June 10...	114	161	256,000,000	300,769,000	1,865,000	44,769,000	17
Dec. 15, 1907	238	May 1....	224	137	264,060,000	353,500,000	2,580,000	89,440,000	34
Jan. 2, 1909.	238	June 20...	218	169	333,560,000	548,680,000	3,250,000	215,120,000	65
Jan. 1, 1910.	239	May 6....	225	126	257,433,000	455,730,000	3,620,000	198,297,000	77
Average....	......	....	......	148	....	....	....	....	48

The rainfall between January 1 and June 10, 1907 at Rio Grande was 9.64 inches; between December 15, 1907, and May 1, 1908, 2.15 inches; between January 2 and June 20, 1909, 22.98 inches, and between January 1 and May 6, 1910, 10.14 inches. The above data shows that the actual consumption exceeds the theoretical capacity by an average of 48 per cent. On this basis, the present capacity of the reservoir is 557,960,000 gallons, an amount somewhat in excess of the quantity drawn off during the dry season of 1909, but the rainfall over the watershed was excessive that year. In addition, there is a third intake, 24 feet below the intermediate intake and above the bottom of the reservoir, giving a total available supply of 613,960,000 gallons, equivalent to 125 days' consumption at the present rate.

The storage in Cocoli Lake amounts to 327,000,000 gallons, and the consumption aggregates about 900,000 gallons per day. The pumping plant there was operated for six weeks of the last dry season, and there was no apparent decrease during that period. It is estimated, therefore, that the actual capacity will exceed the theoretical by about 50 per cent, indicating the dry season supply for 1910-11 to be about 490,500,000 gallons. The combined capacity of the two reservoirs on the above basis is 1,104,460,000 gallons, and, with a total draw-off daily of 5,800,000 gallons, should last until July 25, or ample to reach into the next rainy season.

PERSONAL.

Col. Geo. W. Goethals sailed for the States on the steamship *Colon* on Sunday, January 29.

Lieutenant-Colonel H. F. Hodges sailed from New York for the Isthmus on January 28 on the *Panama*, which is due to arrive at Cristobal on February 3.

Maj. Wendell L. Simpson, U. S. A., assistant purchasing officer for the Isthmian Canal Commission and Panama Railroad Company at New York City, accompanied by his wife and daughter, arrived at Cristobal on the *Advance*, Friday, January 28.

Capt. Horton W. Stickle, accompanied by his wife and three children, sailed for Jamaica on Thursday, January 26, on the *Almirante*, where he will spend his annual leave of absence.

Col. J. P. Fyffe, accompanied by Mrs. Fyffe, returned on the steamer *Abangarez* from New Orleans, on Thursday, January 26, from his annual leave of absence.

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the week ending January 28, follows:

Date.	Hours worked.	Cubic Yards.
January 23	6:35	3,264
January 24	8:11	4,118
January 25	7:31	3,254
January 26	7:30	3,217
January 27	7:31	3,027
January 28	8:49	3,575
Total	46:07	20,455

Empire Athletic Meet.

An athletic meet will be held at Empire on Washington's Birthday, February 22, beginning at 9 a. m. There will be 16 events, as follows: One hundred-yard dash; shot put; 100-yard dash, finals; high jump; 220-yard dash; hammer throw; low hurdles; running broad jump; 220-yard dash, finals; 100-yard dash, boys'; 440-yard dash; pole vault; boys' relay race, four laps; mile run; two-mile walk; men's relay race, four laps, one-sixth mile to the lap.

Gold, silver, and bronze medals will be given in all the events, except the relay, in which four medals will be awarded the winning team. An entry of 50 cents for the first event, and 25 cents for each additional event will be charged, and must accompany the entry blank. Special prizes will be awarded in the boys' events, for which an entry fee of 25 cents is charged. All applications should be forwarded to William E. Burrell, clerk of course, Cristobal, C. Z.

Bound copies of volume I of The Canal Record can be obtained at the news stand in the Panama railroad station at Panama.

Rainfall from January 1 to 28, 1911, Inclusive.

Stations.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	.39	15	.83
Balboa	.28	1	.38
*Miraflores	.23	16	.27
Pedro Miguel	.03	11	.03
Rio Grande	.01	1-12	.02
Central Section—			
Culebra	.01	1-12	.02
*Camacho	.04	24	.04
Empire	.02	23	.02
Gamboa	.06	23	.11
*Juan Mina	.04	12	.04
Alhajuela	.08	24	.12
*El Vigia	.12	24	.20
*Gorgona	.20	1	.26
San Pablo	.27	16	.52
Tabernilla	.04	1	.08
Bohio	.16	11	.30
*Monte Lirio	.42	12	.80
Atlantic Section—			
Gatun	.20	24	1.04
*Brazos Brook	.40	24	.95
Cristobal	.15	24	.83
Porto Bello	.17	27	*.77

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

†To 5 p. m., January 27.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

The following bowling scores were made during the week ending January 27: Duckpins—Conlan, 103; Lindsay, 102; Case, 103, 105, 108. Bigpins—Herrington, 217.

The new assistant secretary, H. N. Sollenberger, is lining up the men for practice for the big meet to be held on February 22. Those who have not entered should do so at once, in order that a complete list can be published at an early date.

Considerable interest is being developed in checkers, several good players having been discovered. If there are any other checker players in Culebra who will leave their names at the office, a definite night will be set aside for this activity.

The motion picture entertainment given on Friday, January 27, was enjoyed by the largest audience of the year.

The topic club meets next Wednesday night, with H. F. French, as leader. The club is open to all members of the Y. M. C. A.

A gymnasium class for boys has been started with practically every member of the boys' department in attendance.

Gymnasium classes for men will be started in the near future.

EMPIRE.

The following officers were elected at the reorganization of the camera club on January 23: President, C. C. Davis; vice-president, J. L. Bewick; secretary-treasurer; H. E. King; librarian, Stanley Stearns. The first outing of the club was held on the 29th, when two parties were organized, one for local views, and the other going to Cruces for pictures.

The following high scores were made last week: Bigpins—McLeod, 203. Duckpins—Lippert, 103; Scull, 107, 102, 100; McLeod, 100; Rhodigiero, 102; Witmar, 102.

The executive council at a meeting on January 17, voted to enlarge the Empire clubhouse and install two new bowling alleys, the entire expense to be paid from the funds of the clubhouse. This action has been approved by the Chairman, and it is understood that work will be begun during the next few days. The alleys have already been ordered from the States.

The gymnasium class opened with a large attendance on Thursday evening, January 26. Men are urged to join this class, and by moderate exercise, guard themselves from sickness. The class will meet regularly on Mondays and Thursdays, and music will be provided for the drills.

The debate held by the literary society on Friday evening, January 27, was won by the affirmative side, which held that the United States should establish a permanent guardianship over the island of Cuba Other numbers on the program were a paper on William Cullen Bryant, and a quiz on parliamentary law.

At the rehearsal of Gaul's "Holy City," held on January 28, three new members were added to the chorus, which now numbers 25. If present plans are carried out the production will be given on February 26.

The Culebra Christian League bowling team defeated the Empire Christian League team on the clubhouse alleys last Saturday night two games out of three. Messrs. Nellis, Hall, Warner, Herrington, and Huttelmeier represented Culebra, and Messrs. Warwick, Dohrmann, Drake, Brown, and Gustavson represented Empire.

The Society of the Epicurean Antiquated Antediluvian Order of Turkey Buzzards has been formed and will meet every Saturday night. All those interested should apply to E. Robertson, secretary.

A joint reception will be tendered Chaplain and Mrs. Nellis, and Mr. and Mrs. Warr on Wednesday evening, February 8. The public, both men and women, are cordially invited to attend. There will be a short musical program, and refreshments will be served.

The literary society on Friday evening, February 3, will discuss "The effect of mind over matter." The discussion will be under the direction of F. P. Wagg.

GORGONA.

The following games were bowled on the Gorgona alleys on Saturday night, January 29:

Gorgona.				Cristobal.			
Roper......	184	157	187	Barrett....	162	191	153
Halderman..	160	188	200	Grover....	130	172	150
White......	174	171	196	Blackburn.	134	156	138
Otis........	150	166	151	Bullard...	171	184	214
Bordt......	119	152	144	Furlong...	122	140	150
Total.....	787	834	878	Total...	719	843	805

The indoor baseball game between Cristobal and Gorgona was won by Gorgona on Saturday night, January 29, by a score of 9 to 7.

The meeting of the discussion club held on Wednesday night, January 25, was led by A. Killough. The subject was "Should the color line be drawn at the ballot box?" All men are invited to attend these meetings. Admission free.

H. D. Meyers led the "Life problem" study club on Friday night, January 27, at 7.30 p. m. The topic was "The value of work and the choice of a life work." All men are invited to join this club. Admission free.

Jess T. Hopkins, assistant secretary, is due to arrive on the *Panama* on Friday, February 3, and will assist in the meet to be held on Washington's Birthday at Empire. A. A. Simka has been elected captain of the track team.

GATUN.

A motion picture entertainment will be given on Saturday evening, February 4, at 8 o'clock. The members, both men and boys, will be given complimentary tickets. Adult nonmembers will be charged 25 cents, and children 15 cents.

A large number of phonograph records recently purchased are being greatly appreciated by the members.

The membership committee met on Monday night, and Otho Heiskell was elected temporary secretary, upon the resignation of W. E. Wittrig.

The membership committee of the Red Cross met at the clubhouse on Tuesday evening, January 31.

The religious work committee met on Wednesday evening, February 1. F. C. Freeman, general secretary of the Y. M. C. A., was present, and addressed the committee on the religious work of the Y. M. C. A. on the Isthmus.

The "married men" bowled the "single men" on Monday night, January 30, the latter being victorious.

CRISTOBAL.

On Wednesday night, January 25, a "Life problem" club began a 12 weeks' study of four important topics. The subject was "Problems of a livelihood" and the phases of this subject discussed were "The value of work," and "Choice of a life work." The leader was H. L. Stuntz.

The glee club is practicing each Tuesday night with from 15 to 20 men present.

The dramatic club is working up a number, which will be part of a vaudeville show to be given on Friday, February 24. The glee club will also have three numbers on the same program.

Preparations are under way to organize two patrols of boy scouts.

The baseball game played between the Cristobal boys and the Ancon boys on Saturday, January 28, resulted in a tie, the score being 4 to 4.

A local scratch pool tournament was started on February 1.

The Gorgona indoor baseball team will play a return game at Cristobal on Saturday night, February 4.

Moving pictures will be given on Friday night, February 3, with vocal solos and music throughout the evening.

"A smoker" will be given to the championship basketball team on February 10.

The 200, or over, scores bowled during the week ending January 28 were, as follows: Jacques, 235; Howard, 210; M. Schwallenberg, 210; Barrett, 205, 208; Rosbeck, 200.

COROZAL.

Moving picture entertainments were given on Saturday evening, January 28, and Tuesday evening, January 31.

All men interested in the track meet to be held at Empire on Washington's Birthday, February 22, will please see the secretary.

Men wishing to join the Spanish class should hand their names to the secretary at once.

The pressing club was opened on February 1. Apply to the secretary for rates.

A pool tournament will be started in a few days.

The membership of the association on Saturday night, January 28, was 86.

Sale of Vehicles at Public Auction.

There will be sold at public auction by the district quartermaster at Cristobal, C. Z., at the I. C. C. corral, at 2 p. m., Saturday, February 4, 1911, to the highest bidder for cash the following Isthmian Canal Commission property:

One hearse, No. 64, and one lumber wagon, No. 46.

The Government reserves the right to accept or reject any or all bids. For further information apply to the district quartermaster, Cristobal, C. Z.

C. A. DEVOL, *Chief Quartermaster.*

The following vessels arrived at and departed from the port of Balboa during the week ending January 28, 1911:

Arrivals—January 22, *San Juan*, from San Francisco; January 23, *Stanley Dollar*, from San Francisco; January 24, *Chile*, from Valparaiso; January 27, *Arica*, from Guayaquil; January 28, *Aztec*, from San Francisco.

Departures—January 21, *G. W. Fenwick*, to San Francisco; January 22, *Pennsylvania*, to San Francisco; January 23, *Ecuador*, to Guayaquil; January 24, *Ucayali*, to Callao; January 25, *Aysen*, to Valparaiso.

BASEBALL.

PANAMA CANAL LEAGUE.

RESULTS OF GAMES, JANUARY 29.

At Ancon— Ancon, 6; Empire, 2.
At Empire—Atlantics, 6; Marines, 4.
At Colon— Gorgona, 1; Commissary-Subsistence, 4.

STANDING OF CLUBS.

	P.	W.	L.	P.C.		P.	W.	L.	P.C.
Com-Sub.	6	6	0	1.000	Gorgona.	6	2	4	.334
Empire..	6	4	2	.667	Atlantics	6	2	4	.334
Ancon...	6	4	2	.667	Marines.	6	0	6	.000

SCHEDULE FOR FEBRUARY 5.

At Ancon— Ancon vs. Atlantics.
At Empire—Empire vs. Commissary-Subsistence.
At Colon— Gorgona vs. Marines.

SUMMARIES OF GAMES, JANUARY 29.

Empire	AB.	H.	PO.	A.	E.
Bryan,3b..	3	1	3	2	1
Moore,c...	2	0	3	2	0
Markley,2b	3	0	3	2	1
Fluharty,rf.	2	0	2	0	0
Bell,1b....	4	0	9	0	1
Toone,ss...	3	0	1	0	1
VanZandt,lf	3	1	1	0	0
Murphy,cf.	3	1	1	0	0
Barnes,p...	3	2	0	3	1
Lyons,c....	2	0	2	1	0
*Marshall..	1	0	0	0	0
Totals...	29	5	25	10	5

Ancon.	AB.	H.	PO.	A.	E.
RDren'n,cf.	4	2	2	0	0
LDren'n,rf.	3	3	0	0	0
Tinsley,lf...	4	2	0	0	0
Smith,2b...	5	1	5	2	0
Potter,3b...	5	1	0	2	1
Caldwell,c..	5	3	8	0	0
James,ss...	3	1	1	3	0
Nygren,1b..	3	0	9	2	0
Murray,p..	3	1	2	4	1
Totals...	35	14	27	13	2

Empire............	0	0	0	0	0	0	0	2	0—2
Ancon.............	1	0	0	3	0	0	0	2	x—6

*Batted for Fluharty in ninth.

Runs—Empire: Van Zandt, Murphy; Ancon: R. Drennan, L. Drennan, Potter, Caldwell, Nygren, Murray. Runs earned—Empire, 2; Ancon, 4. Two base hits—Van Zandt, Murphy, Tinsley, 2. Sacrifice bits—Bryan, L. Drennan, James. Sacrifice fly—Tinsley. Stolen bases—R. Drennan, L. Drennan, Caldwell. Bases on balls—Off Barnes, 3; off Murray, 2. Struck out—By Barnes 4; by Murray, 5. Left on bases—Empire, 3; Ancon, 12. Double plays—James to Smith to Nygren; Murray to Nygren. Umpire—Lawler. Time of game—1.45. Attendance, 400. Scorer—J. K. Munroe.

Atlantics	AB.	H.	PO.	A.	E.
Hennessy,ss	5	1	3	4	0
Gamble,1b.	4	2	12	1	2
Edwards,2b	3	2	1	3	0
Sullivan,cf.	3	1	2	0	0
Osborne,rf.	4	2	1	0	0
Herring,3b.	3	0	2	1	0
Thompson,c	3	1	5	2	0
Kaufman,lf	4	1	1	0	0
Johnston,p.	4	0	0	0	1
Totals...	33	10	27	11	3

Marines	AB.	H.	PO.	A.	E.
McCabe,c..	3	0	5	2	2
Richards,c..	0	0	1	0	0
Maguire,1b.	3	1	12	1	1
Shepard,2b.	3	2	3	5	1
Guskie,ss...	4	1	1	4	0
McKelvey,cf	2	0	3	0	0
Silke,rf.....	4	0	2	0	0
Field,3b....	3	1	0	1	1
Burns,lf....	3	0	0	0	0
Buckley,p..	1	0	0	0	0
*Austin....	1	0	0	0	0
†Munsen...	1	1	0	0	0
Totals...	28	6	27	13	5

Atlantics..........	1	0	0	0	0	3	0	2	0—6
Marines...........	0	0	1	0	0	0	0	1	2—4

*Batted for Burns in ninth.
†Batted for Buckley in ninth.

Runs—Atlantics: Gamble (2), Edwards, Sullivan, Osborne (2); Marines: Richards, Maguire, Guskie, Munsen. Runs earned—Atlantic, 4; Marines, 3. Two base hits—Maguire, Osborne. Three base hits—Edwards, Osborne. Sacrifice hits—Gamble, Edwards, Herring, Shepard. Sacrifice fly—McKelvey. Stolen bases—Hennessy (3), Gamble, Sullivan, Herring, Thompson, Kaufman, Maguire. Bases on balls—Off Johnston, 5; off Buckley, 2. Struck out—By Johnston 4; by Buckley, 3. Hit by pitcher—By Johnston, McKelvey. Left on bases—Atlantics, 7; Marines, 8. Umpire—Irwin. Time of game—2.20. Scorer—Moeller.

C.-S.	AB.	H	PO.	A.	E.
Sullivan,lf..	5	0	0	0	0
Breiv'gle,2b	5	3	0	0	0
Curtis,3b..	3	2	0	2	0
Mosher,ss..	4	1	1	3	0
Guptil,1b..	4	0	8	2	1
Coffin,rf...	3	0	0	0	0
Hod'ett,cf,c	4	0	11	1	p
Meegan,c..	1	0	5	0	0
Beard,cf...	2	0	1	0	0
Kellogg,p..	3	0	1	3	0
McCusty,cf	1	0	0	0	0
Totals...	35	6	27	11	1

Gorgona.	AB.	H.	PO.	A.	E.
Clements,ss.	4	1	2	0	1
Barney,2b..	2	1	1	1	0
Herring,c...	3	1	14	1	1
Wright,1b..	4	0	7	0	1
Briggs,3b...	4	1	2	3	0
Tretter,p...	4	1	0	2	0
Emery,lf...	2	0	0	0	0
Fullerton,cf.	3	0	0	0	0
Ridge,rf....	2	0	1	0	0
*Burford..	1	0	0	0	0
Totals...	29	5	27	7	3

Com.-Subsistence...	1	0	0	2	0	0	0	0	1—4
Gorgona...........	0	0	0	0	1	0	0	0	0—1

Runs—C.-S.: Sullivan, Breivogle, Curtis, Mosher; Gorgona: Clements. Runs earned—C.-S., 2. Two base hit—Curtis. Three base hit—Breivogle. First base on errors—C.-S.,2. Sacrifice hits—Coffin, Barney, Ridge. Passed ball—Herring.. Stolen bases—Sullivan, Curtis. Bases on balls—Off Kellogg, 4; off Tretter, 1. Struck out—By Kellogg, 15; by Tretter, 12. Hit by pitcher—By Kellogg, 1 (Herring). Balk—Tretter. Wild pitch—Kellogg, 1; Tretter, 1. Left on bases—Gorgona,7; C.-S., 6. Umpire—Freel. Time of game—2.15. Attendance, 450. Scorer—J. P. Mead.

*Batted for Ridge in the ninth.

The Corozal baseball team defeated the Balboa nine on the latter's grounds, on Sunday, January 29, by the score of 21 to 9.

OFFICIAL CIRCULARS.

Acting Chairman and Chief Engineer.

CULEBRA, C. Z., January 28, 1911.

CIRCULAR No. 367:

Upon the return from leave on which he is now absent, Lieutenant-Colonel H. F. Hodges will, during my absence from the Isthmus, be in charge of the work as Acting Chairman and Chief Engineer.

In the interim between my departure and the return of Lieutenant-Colonel Hodges, Mr. H. H. Rousseau will act as Chairman and Chief Engineer, effective January 29, 1911.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Delivery of Gravel.

CULEBRA, C. Z., January 25, 1911.

HEADS OF DEPARTMENTS AND DIVISIONS:

The reclaiming of gravel from the Chagres River has been turned over to the Central Division for operations below Gamboa bridge, and to the Panama Railroad Company for operations above Gamboa bridge. All requests of other departments and divisions for Chagres River gravel will be forwarded to this office on form C. E. No. 159, stating the quantity, place and time of delivery, and purpose for which gravel is desired. Decision will be made by me in each case, whether gravel shall be furnished from the stock pile of the Central Division at Matachin, or from the stock pile of the Panama Railroad Company, opposite Gamboa. The price will be governed by the provisions of Circular No. 169-E, relating to sand and stone.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Rules Governing Shop Employes.

CULEBRA, C. Z., January 1, 1911.

CIRCULAR No. 262-D. (Superseding CIRCULAR Nos. 262-A-B-C:

The following rules governing shop employes of the Isthmian Canal Commission and Panama Railroad Company will become effective this date, and will supersede previous Circulars Nos. 262-A, 262-B, and 262-C on the same subject.

Copies of these rules, printed on cardboard, should be posted in conspicuous places in all shops of the Isthmian Canal Commission and the Panama Railroad Company, where all employes will have an opportunity to see them.

Additional copies, either pamphlet or placard form may be secured upon requisition placed with the Depot Quartermaster, Mount Hope, C. Z.

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1. *Working hours*—Regular working hours for the day shift will be:—

7 a. m. to 11 a. m.
1 p. m. to 5 p. m.

The hours of work for a night shift will be fixed by the head of the division or department, and will consist of eight consecutive hours.

Regular working hours of hourly employes will not be changed unnecessarily from day to day, and in shops working more than one shift individual men will not be changed from shift to shift more frequently than the necessities of the work require. Existing rules limiting overtime must not be construed as authorizing or permitting men to be laid off during the hours of their regular shift solely to reduce the amount of overtime. when they are able to render efficient service during their regular shift and there is work for them to perform.

Employes will assemble at their various places of work and be ready to start work at the signal. All not otherwise assigned are expected to be on duty and work regularly the prescribed hours.

Eight hours will constitute a day's work for American shop employes, whether on day or on night duty.

Employes will not be permitted to smoke, to wash up, to change their clothes, to transact other than official business, or to leave the work assigned to them, except for necessary purposes, during working hours.

An employe will not be permitted to work when his physical condition will not enable him to prosecute it satisfactorily, both as to quality and quantity.

2. *Manner of checking in and out*—Upon reporting for duty before time for commencing work at 7 a. m., or 1 p. m., and at the hour fixed for night work to begin, each employe will regularly call for and obtain a work check from the timekeeper's check window.

Each employe will deposit his work check, where receipt is provided for, within 15 minutes after the completion of each work period.

An employe coming in after signal to commence work will not be permitted to begin until the next half-hour, or hour, after the signal is given, and not then until after reporting to the timekeeper in the master mechanic's office and obtaining with his work check a written notice, which he will present to his foreman, advising the latter of his having been checked in late.

An employe, who for any cause goes out prior to regular quitting time, must obtain from his foreman, in each case, a written notice, which he will present to the timekeeper in the master mechanic's office with work check before leaving the shop.

3. *Penalty for failure to properly check in and out*—The calling for or the depositing by one employe of the work check of another employe will be cause for dismissal.

An employe, who fails to draw or to deposit his work check as required by Rule 2, will be disciplined, as follows: If the employe can prove by his foreman, leading man, or by not less than two disinterested employes that he worked during the hours not accounted for by his failure to check in or out, he will be credited for the time actually worked by him; if the proof required cannot be furnished, he will be credited only for the time covered by the work check or timekeeper's record.

In either case the discipline will consist of a cautionary letter, which will show the number of previous offenses of the same character during one year.

For the ninth failure to check in or out within one year the discipline will consist of suspension without pay of from one to 10 days, or of dismissal, depending upon the circumstances of the case.

4. *Quality and quantity of work performed to be satisfactory to foreman and master mechanic*—Each employe will be required to turn out a full day's work each day. An employe, whose workmanship is not up to the standard, either in quality or quantity, or both, will be warned orally by his foreman. If the standard is not attained within 12 working days after the oral warning, the employe will be so notified by a warning letter from the master mechanic, after which, if there is still no improvement, the employe will be reduced to the grade and rate of pay called for by the quality and quantity of work he is turning out. A warning letter will give the employe at least 10 working days in which to attain the standard, except in case of gross incompetency.

Mistakes made in work will be considered as affecting the quality of work performed by an employe and will be acted on as prescribed above, except that a warning letter will not be written until the number, character, or frequency of mistakes made by an employe clearly show incompetency or carelessness. All mistakes that involve the loss of material, and all important mistakes not involving the loss of material, will be made a matter of record in the form of a cautionary letter.

5. *Absence without permission*—For absence without prior permission of less than two days in succession, that is not covered by a medical certificate of disability, or by satisfactory proof that the absence was caused by circumstances beyond the control of the employe, the discipline for the first offense will consist of a cautionary letter, and for the second and subsequent offenses of suspension without pay of from one to three days.

For absence without prior permission of two or more days in succession, that is not covered by a medical certificate of disability, or by satisfactory proof that the absence was caused by circumstances beyond the control of the employe, the discipline for the first offense will consist of a cautionary letter, and, in addition, suspension without pay for one day, and, for the second and subsequent offenses of suspension without pay of from two to 10 days, or of dismissal, depending upon the circumstances of the case and the previous record of the employe.

Two absences from work within one year on account of intemperance will be cause for dismissal.

6. *Employes responsible for tools and material in their possession*—All employes are responsible for tools or material issued to or used by them, and will be required to pay, by deductions which will be entered against their wages on pay rolls, for any loss or damage to same through neglect or carelessness.

If there are found in the locker or possession of an employe tools or other articles that are not his personal property, or that have not been issued to him in the prescribed manner for use in his work, the discipline will consist of an oral warning, or suspension without pay of not to exceed five days, or of dismissal, depending upon the circumstances of the case.

7. *Personal injuries to be reported promptly*—An employe injured in line of duty must report to his foreman before leaving the shop, unless too seriously injured to be able to do so, in order that report may be made of the case, as required by law governing pay for time lost on account of injury. The work check of an injured employe will be delivered to the foreman.

8. *Hotel and commissary coupon books*—Hotel and commissary coupon books will be issued in accordance with section 136 of the timekeeping rules.

Employes desiring coupon books will place their orders with the coupon book clerk, foreman, or assistant to foreman, as arranged locally in each shop.

Books ordered will be prepared and delivered as promptly as possible, usually within two days.

Special attention of all concerned is directed to the necessity for complying with the contract and instructions on inside of the covers of hotel and commissary coupon books, and also to the orders regarding the use of 24-trip books and half rates, for the reason that violation of these contracts or instructions will result in financial loss and dismissal from the service.

9. *Complaints and requests*—Complaints or requests should be taken up through the employe's immediate foremen for decision; appeal, if made, must be in regular order through the general foremen and master, mechanic before being carried to the head of division or department or higher authority.

10. *Insubordination*—Insubordination, loafing, or being under the influence of intoxicating liquors during working hours will be cause for dismissal.

11. *Administration of discipline*—The superintendent, master mechanic, or general foreman in charge of a shop, upon the recommendation of foreman or leading men and after personal investigation of the case, may issue cautionary and warning letters and make suspensions and dismissals, except that foremen or acting foremen in immediate charge of employes may discharge them for insubordination.

GEO. W. GOETHALS.
Chairman and Chief Engineer, I. C. C.
President, Panama Railroad Company.

Accumulative Leave.

CULEBRA, C. Z., January 25, 1911.

HEADS OF DEPARTMENTS AND DIVISIONS:

The following information has been deduced from the data submitted by the various divisions and departments regarding percentage of employes who will probably avail themselves of the cumulative feature of Circular No. 132-H:

DEPARTMENT OR DIVISION.	To accumulate.	Not to accumulate.	Percent to accumulate
Subsistence Department	84	105	44
Sanitary Department	115	293	28
Department of Civil Administration	114	203	36
Quartermaster's Dept.	148	105	55
Examiner of Accounts	62	47	57
Disbursing Office	2	26	7
Atlantic Division	385	587	39
Central Division	371	391	49
Pacific Division	186	334	36
Mechanical Division	34	120	22
Division of Clubhouses	0	14	0
Third Division, Chief Engineer's Office	15	19	44
Totals	1,516	2,244	43

Forty-three per cent of the employes of the Commission will probably avail themselves of cumulative leave.

P. R. R. Commissary	84	105	44
P. R. R. Relocation	35	75	32
P. R. R. Company	205	191	52
Totals	324	371	47

Forty-seven per cent of the employes of the Panama Railroad Company will probably avail themselves of cumulative leave.

Forty-five per cent of the employes of both the Commission and the Panama Railroad Company will probably avail themselves of the cumulative leave.

As it appears probable that nearly half of the employes of the Isthmian Canal Commission and Panama Railroad Company will not take their leave this year, care must be exercised with respect to taking on new men and using the force to the best advantage, so that the increased expenditure necessary when these men will be granted the leave accumulated may be counterbalanced by a saving this year.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Obstruction to Work Caused by Buildings.

CULEBRA C. Z., January 25, 1910.

HEADS OF DEPARTMENTS AND DIVISIONS:

In carrying out the provisions of Circular No. 293, dated November 23, 1909, the heads of the different construction divisions will be held responsible for giving due notice of obstruction to their work caused by buildings, or danger to buildings, which they consider should be removed.

In the case of I. C. C. buildings, this notice should be forwarded to me in duplicate, one copy for the Chief Quartermaster, and the other for the surveying officer, upon receipt of which the latter will assemble board appointed in Circular No. 293 to submit report and recommendations as provided therein.

In the case of P. R. R. buildings, notice should be forwarded to the General Superintendent of the Panama Railroad Company, and a copy sent to me. The General Superintendent of the Panama Railroad Company will initiate proper action upon receipt of such notice.

In the case of buildings of private ownership, the provisions of Circulars Nos. 193 and 301 should be strictly observed.

GEO. W. GOETHALS,
Chairman and Chief Engineer.
President, Panama Railroad Company.

COMMISSARY DEPARTMENT.

Acting Chief Clerk, Commissary and Subsistence Departments.

CRISTOBAL, C. Z., January 26, 1911.

CIRCULAR No. 265:

Effective January 26, 1911, and during the absence of Mr. W. F. Shipley on vacation, Mr. Wm. T. McCormack will act as chief clerk of the Commissary and Subsistence Departments.

EUGENE T. WILSON, *Subsistence Officer.*

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning February 1.

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	6
Shoulder, neck trimmed off, (4 lbs. and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg, (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing per pound	8
Shoulder for roasting (not under 4 pounds), per pound	*12½
Loin for roasting, per pound	19
Chops, per pound	24
Cutlets, per pound	28
Pork cuts, per pound	16
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	*8
Corned, per pound	12, 14, 16
Chuck roast, (3 pounds and over), per pound	*12
Pot roast, per pound	*12½
Rib roast, second cut (not under 3½ pounds), per pound	*16
Rib roast, first cut (not under 3 pounds), per pound	*18
Sirloin roast, per pound	*19
Rump roast, per pound	*19
Porterhouse roast, per pound	*20
Steak, Chuck, per pound	*12½
Round, per pound	*13
Rib, per pound	*18
Sirloin, per pound	*19
Porterhouse (not less than 1½lbs.) per pound	*20
Rump, per pound	*19
Tenderloin (Western) per pound	24
Tenderloin (Native) per pound	30

MISCELLANEOUS.

Livers—Beef, per pound	*7
Calf, each	60
Half, each	30
Sausage—Pork, per pound	*15
Bologna, per pound	*10
Frankfurter, per pound	*12
Leberwurst, per pound	*10
Sweet bread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	*36
½ dozen only	*20
Bluefish, fresh, per pound	16
Cod, fresh, per pound	10
Halibut, fresh, per pound	15
Oysters, in 1-qt. kegs, keg	50

POULTRY AND GAME.

Chickens—Fancy roasting, large, each	*1.25
medium, each	*1.00
Fowls, each	60, 70, 80, 90, *1 00
Ducks, large, each	*1 30
medium, each	*1.10
Broilers, each	*60
Turkeys, per pound	*28
Squabs, each	35
Capons, each	2.60
Pheasants, each	70, 1.00
Partridges, each	50
Grouse, each	85

CURED AND PICKLED MEATS.

Ham—English York Cut, per pound	30
German, Westphalia, per pound	36
Sugar cured, per pound	*18
Sliced, per pound	*20
Half, for boiling, per pound	*19
Boiled, per pound	25
Hocks, per pound	†08
Bacon—Breakfast, whole piece, per pound	*23
Breakfast, sliced, per pound	*24
Beef, salt, family, per pound	9½
Pork, salt, family, per pound	14
Ox tongues, each	*75
Pigs' feet, per pound	*09
Tongues, per pound	*14
Sliced Bacon in 1-lb tins, per tin	30
In 1-lb jars, per jar	30

DAIRY PRODUCTS.

	Price.
Butter—Creamery special, per pound	38
Cheese—Roquefort, per pound	38
Philadelphia Cream, cake	10
Young America, per pound	*20
Swiss, per pound	26
Edam, each	1.00
Camembert, in large tins, tin	38
Camembert, in small tins, tin	14
Neufchatel, each	6
Gouda, per pound	34
Milk (Inspected or certified) per bottle	**25
(Pasteurized), bottle	**18
Buttermilk, bottle.	**15
Ice cream, quart	‡25
Ice cream, ½-gallon	‡50

VEGETABLES AND FRUITS.

Beets, per pound	3
Celery, per head	*6
Carrots, per pound	3
Cabbage, per pound	3
Cucumbers, per pound	10
Lettuce, per pound	15
½ pound	8
Onions, per pound	3½
Potatoes, white, per pound	*2½
Sweet, per pound	*2
Parsnips, per pound	3
Squash, per pound	4
Turnips, per pound	3
Yams, per pound	*3
Apples, per pound	6
Cranberries, per pound	10
Grapes, per pound	16
Grapefruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12
Tangerines, each	2

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*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal and Colon for the two weeks ending January 28, 1911:

Oruba, January 15, from New York, with 350 kegs wire nails, 250 bundles galvanized steel, 71 bundles galvanized pipe for stock.

Allianca, January 16, from New York, with 73 packages wheelbarrow parts, 44 packages car parts, 7 reels cable for Atlantic Division; 6 packages steel castings for Central Division; 8 pieces 24-inch pipe for Pacific Division; 3 reels wire rope for Mechanical Division; 9 cases drugs and sundries for Sanitary Department; 10 barrels iron pipe-fitttings, 34 pieces iron pipe-fittings, 46 bundles iron, 619 kegs rivets, 7 cases bolts, 7 cases files, 13 cases trays, 7 cases air brake material, 20 cases incandescent lamps, 44 packages drill machinery, 13 casks chains for stock; and a miscellaneous cargo, the whole consisting of 1,265 packages, weighing 208 tons.

Ancon, January 19, from New York, with 24,692 barrels cement for Atlantic Division; 115,232 bags cement for Pacific Division.

Turrialba, January 19, from New Orleans, with 48,646 feet yellow pine lumber, 221 barrels fire clay, 13 packages range parts, 33 bales grass rugs, 164 bales cotton waste, 30 cases lantern globes for stock.

Almirante, January 19, from New York, with 6 bundles steel castings for Atlantic Division; 35 tons lock construction material for Pacific Division.

Birdoswald, January 21, from New York, with 14,307 barrels cement for Atlantic Division; 68,924 bags cement for Pacific Division.

Colon, January 22, from New York, with 21 pieces rough castings, 25 packages dump car parts for Atlantic Division; 48 car wheels, 8 spare propeller blades, 40 packages drill parts for Pacific Division; 42 cases drugs and sundries, 1 engine for motor boat for Sanitary Department; 36 cases water meters, 85 cases caustic soda, 324 pieces steel bars, 81 bundles corn brooms, 7 cases insulated wire, 169 packages thermit material, 48 crates stoves, 109 cases drill parts for stock; and a miscellaneous cargo, the whole consisting of 1,353 packages, weighing 147 tons.

Prinz August Wilhelm, January 23, from New York, with 5 reels wire rope , 43 pieces screw jacks for stock.

Santa Marta, January 26, from New York, with 43 packages drift bolts, 231 drums oil, 400 pails grease for stock.

Abangarez, January 26, from New Orleans, with 8 pieces chain for Central Division; 12 crates concrete machinery for Pacific Division; 189,343 feet yellow pine lumber, 40 cases yellow ochre, 2,411 bales prairie hay for stock.

Allianca, January 28, from New York, with 42 pieces machinery for Atlantic Division; 3 cable chains for Central Division; 4 barrels snatch blocks, 4 reels wire rope for Mechanical Division; 30 cases drugs and sundries for Sanitary Department; 9 cases electrical material, 40 crates stove pipe, 120 cases salt water soap, 8 reels wire rope, 82 kegs bolts, 57 cases bolts, 17 bundles corn mats, 106 ash cans, 376 kegs nuts, 15 crates iron valves for stock; and a miscellaneous cargo, the whole consisting of 1,680 packages, weighing 197 tons.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL

Panama	P. R. R.	Saturday	Jan. 28
Allianca	P. R. R.	Saturday	Feb. 4
Colon	P. R. R.	Friday	Feb. 10
Advance	P. R. R.	Thursday	Feb. 16
Panama	P. R. R.	Thursday	Feb. 23
Allianca	P. R. R.	Wednesday	Mar. 1
Colon	P. R. R.	Tuesday	Mar. 7
Advance	P. R. R.	Monday	Mar. 13
Panama	P. R. R.	Saturday	Mar. 1[illegible]
Allianca	P. R. R.	Friday	Mar. 24
Colon	P. R. R.	Friday	Mar. 31
Advance	P. R. R.	Thursday	Apr. 6

CRISTOBAL TO NEW YORK.

Advance	P. R. R.	Friday	Feb. 3
Panama	P. R. R.	Friday	Feb. 10
Allianca	P. R. R.	Thursday	Feb. 16
Colon	P. R. R.	Wednesday	Feb. 22
Advance	P. R. R.	Tuesday	Feb. 28
Panama	P. R. R.	Tuesday	Mar. 7
Allianca	P. R. R.	Monday	Mar. 13
Colon	P. R. R.	Sunday	Mar. 19
Advance	P. R. R.	Saturday	Mar. 25
Panama	P. R. R.	Friday	Mar. 31
Allianca	P. R. R.	Thursday	Apr. 6

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 11th and 28th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Metapan	U. F. C.	Thursday	Jan. 26
Prinz Joachim	H.-A.	Saturday	Jan. 28
Zacapa	U. F. C.	Thursday	Feb. 2
Orotava	R. M.	Saturday	Feb. 4
Sibiria	H.-A.	Saturday	Feb. 4
Almirante	U. F. C.	Thursday	Feb. 9
Prinz Aug. Wilhelm	H.-A.	Saturday	Feb. 11
Santa Marta	U. F. C.	Thursday	Feb 16
Thames	R. M.	Saturday	Feb 18
Sarnia	H.-A.	Saturday	Feb. 18
Metapan	U. F. C.	Thursday	Feb. 23
Prinz Joachim	H.-A.	Saturday	Feb. 25
Zacapa	U. F. C.	Thursday	Mar. 2

COLON TO NEW YORK.

Santa Marta	U. F. C.	Thursday	Feb. 2
Thames	R. M.	Monday	Feb. 6
Sarnia	H.-A.	Tuesday	Feb. 7
Metapan	U. F. C.	Thursday	Feb. 9
Prinz Joachim	H.-A.	Wednesday	Feb. 14
Zacapa	U. F. C.	Thursday	Feb. 16
Tagus	R. M.	Monday	Feb. 20
Sibiria	H.-A.	Tuesday	Feb. 21
Almirante	U. F. C.	Thursday	Feb. 23
Prinz Aug. Wilhelm	H.-A.	Tuesday	Feb. 28
Santa Marta	U. F. C.	Thursday	Mar. 2

NEW ORLEANS TO COLON.

Heredia	U. F. C.	Wednesday	Jan. 25
Atenas	U. F. C.	Saturday	Jan. 28
Cartago	U. F. C.	Wednesday	Feb. 1
Turrialba	U. F. C.	Saturday	Feb. 4
Parismina	U. F. C.	Wednesday	Feb. 8
Abangarez	U. F. C.	Saturday	Feb. 11
Heredia	U. F. C.	Wednesday	Feb. 15

COLON TO NEW ORLEANS.

Abangarez	U. F. C.	Thursday	Feb. 2
Heredia	U. F. C.	Thursday	Feb. 2
Atenas	U. F. C.	Thursday	Feb. 9
Cartago	U. F. C.	Thursday	Feb. 9
Turrialba	U. F. C.	Thursday	Feb. 16
Parismina	U. F. C.	Thursday	Feb. 16
Abangarez	U. F. C.	Thursday	Feb. 23

COLON TO BARBADOS, CALLING AT TRINIDAD.

Orotava	R. M.	Tuesday	Feb. 11

The next sailing of the Leyland Line will be as follows: Memphian on or about February 18, for New Orleans via Kingston, Ja.

Hamburg-American steamers leave for New York every Tuesday at 10 a. m.; for Jamaica every fortnight, connecting there with steamers for all points in Cuba; for Port Limon every Tuesday, direct, or by way of Bocas del Toro.

Royal Mail steamers leave for New York on alternate Mondays at 5 p. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursday at 3 p. m.; for New Orleans via Port Limon and Puerto Barrios on Thursday at 6 p. m., and for New York on Thursday at 11 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3d and 20th of each month.

STATEMENT OF

CONSTRUCTION EXPENDITURES

TO JUNE 30, 1911

(Part II of The Canal Record, August 9, 1911.)

STATEMENT OF CONSTRUCTION EXPENDITURES TO JUNE 30, 1911.

Table No. 1.

Includes administrative and general expenses, but does not include general items or expenditures for sanitation, hospitals, or civil government.

Items.	Fourth Quarter, Fiscal Year 1911.			To March 31, 1911			Total to June 30, 1911.		
	Quantities.	Amount.	Unit Cost.	Quantities.	Amount.	Unit Cost.	Quantities.	Amount.	Unit Cost.
Atlantic Division—	*Cubic Yards.*			*Cubic Yards.*			*Cubic Yards.*		
1 Dry excavation, prism	188,669	$113,244.03	$0.6002	1,568,457	$1,071,393.50	$0.6831	1,757,126	$1,184,637.53	$0.6742
2 Hydraulic excavation, prism	14,350	5,224.61	.3641	14,255	$3,640.16	.2554	28,605	8,864.77	0.3099
3 Dredging excavation, prism	1,444,450	348,520.65	.2413	22,527,678	5,299,054.13	.2352	23,972,128	5,647,574.78	0.2356
Gatun Spillway—									
4 Dry excavation				1,544,202	1,096,180.59	$0.7099	1544,202,	1,096,180.59	0.7099
5 Preparing foundations	3,944	10,612.94	$2.6909	33,024	65,166.95	1.9733	36,968	75,779.89	2.0499
6 Masonry	12,655	85,789.73	6.7791	131,092	1,063,499.40	8.1126	143,747	1,149,289.13	7.9952
7 Ironwork		10,495.21			9,335.98			19,831.19	
8 Back filling	5,717	6,584.95	1.1518	8,937	1,508.28	.1688	14,654	8,093.23	.5523
Total		$113,482.83			$2,235,691.20			$2,349,174.03	
Gatun Dam—									
9 Dredging excavation				38,425	$20,041.19	$0.5216	38,425	$20,041.19	$0.5216
10 Dry filling	640,877	$293,219.15	$0.4575	6,812,850	2,748,291.78	.4034	7,453,727	3,041,510.93	.4081
11 Hydraulic filling	1,220,014	266,212.49	.2182	6,689,601	1,829,236.75	.2734	7,909,615	2,095,449.24	.2649
12 Paving				40,411	14,719.69	.3642	40,411	14,719.69	.3642
Total		$559,431.64			$4,612,289.41			$5,171,721.05	
Gatun Locks—									
13 Dry excavation		***$5,783.05**		4,555,395	$3,089,734.63	$0.6783	4,555,395	$3,083,951.58	$0.6770
14 Dredging excavation		3,235.15		488,533	89,476.27	.1830	488,533	92,711.42	.1898
15 Preparing foundations, excavation	42,596	82,501.71	$1.9369	143,829	280,740.19	1.9519	186,425	363,241.90	1.9485
16 Preparing foundations, filling		***6.61**		40,117	15,233.34	.3797	40,117	15,226.73	.3796
17 Preparing foundations, concrete piling, (lineal feet)	8,196	18,764.75	2.2895				8,196	18,764.75	$2.2895
18 Masonry	190,510	1,290,025.15	6.7714	1,234,430	8,973,744.97	7.2695	1,424,940	10,263,770.12	7.2029
19 Ironwork		205,645.62			775,216.84			980,862.46	
20 Back filling	193,284	65,658.95	.3397	346,575	253,209.26	.7306	539,859	318,868.21	.5906
21 Filling center wall	2,717	3,101.25	1.1414				2,717	3,101.25	1.1414
Total		$1,663,142.92			$13,477,355.50			$15.140,498,42	
Gatun-Mindi Levee—									
22 Dry fill				177,158	$68,985.15	$0.3894	177,158	68,985.15	$0.3894
23 Hydraulic fill				20,398	3,483.32	.1708	20,398	3,483.32	.1708
Total					$72,468.47			$72,468.47	
24 Colon breakwater	125,897	$86,748.50	$0.6890	233,993	$578,634.15	$2.4729	359,890	$665,382.65	1.8488
Total construction cost, Atlantic Division		$2,889,795.18			$27,350,526.52			$30,240,321.70	
25 Plant and equipment to be absorbed in construction costs after June 30, 1911								$3,620,051.46	
Total expenditure, Atlantic Division								$33,860,373.16	
Central Division—									
26 Dry excavation, prism	4,278,626	$2,693,027.61	$0.6294	73,059,609	64,299,578.91	$0.8801	77,338,235	$66,992,606.52	$0.8662
27 Clearing Canal line, without excavation	acres 70	277.59	$3.9656	acres 2210	139,038.82	$62.9134	acres 2,280	139,316.41	61.1037
28 Dredging excavation					9,798.40			9,798.40	
29 Masonry	146	2,045.71	14.0117	874	4,178.73	4.7811	1,020	6,224.44	6.1024
Total construction cost, Central Division		$2,695,350.91			$64,452,594.86			$67,147,945.77	
30 Plant and equipment to be absorbed in construction costs after June 30, 1911								$790,169.02	
Total expenditures, Central Division								$67,938,114.79	
Pacific Division—									
31 Dry excavation, prism	154,775	$126,668.70	$0.8184	283,168	$235,493.23	$0.8316	437,943	$362,161.93	$0.8270
32 Dredging excavation, prism	1,458.049	266,065.03	.1825	27,128,923	6,780,190.14	.2499	28,586,972	7,046,255.17	.2465
33 Hydraulic excavation, prism	105,720	90,062.81	.8519	91,957	39,739.45	.4322	197,677	129.802.26	.6566
Pedro Miguel Dam—									
34 Dry excavation				4,074	$6,167.28	$1.5138	4,074	$6,167.28	$1.5138
35 Dry filling		$4,637.91		260,852	121,363.91	4653	260,852	126,001.82	.4830
Total		$4,637.91			$127.531.19,			$132,169.10	
Pedro Miguel Locks—									
36 Dry excavation	4,536	$4,030.10	$0.8885	1,030,544	$994,676.01	$0.9652	1,035,080	$998,706.11	$0.9649
37 Preparing foundations	8,693	22,339.25	2.5698	113,102	323,850.34	2.8633	121,795	346,189.59	2.8424
38 Masonry	66,013	378,093.60	5.7276	599,043	3,212,692.04	5.3630	665,056	3,590,785.64	5.3992
39 Ironwork		29,016.73			490,384.33			519,401.06	
40 Back filling	94,670	41,202.94	.4352	188,655	77,186.60	.4091	283,325	118,389.54	.4179
Total		$474,682.62			$5,098,789.32			$5,573,471.94	
Miraflores Dams and Spillway—									
41 Dry filling	125,607	$49,419.99	$0.3934	690,892	$394,527.44	$0.5710	816,499	$443,947.43	$0.5437
42 Hydraulic filling		13,548.54			9,191.76			22,740.30	
43 Masonry, core wall					429.51			429.51	
44 Dry excavation				14,536	19,991.26	1.3753	14,536	19,991.26	1.3753
Total		$62,968.53			$424,139.97			$487,108.50	
Miraflores Locks—									
45 Dry excavation, diversions				5,885	$2,028.98	$0.3448	5,885	$2,028.98	$0.3448
46 Dry excavation, in locks	170,559	$134,270.92	$0.7872	1,427,276	1,488,458.62	1.0429	1,597,835	1,622,729.54	1.0156
47 Dredging excavation				309,647	142,379.66	.4598	309,647	142,379.66	.4598
48 Hydraulic excavation				332,703	195,299.02	.5870	332,703	195,299.02	.5870
49 Preparing foundations	5,190	19,482.20	3.7538	196,598	370,060.57	1.8823	201,788	389,542.77	1.9305
50 Masonry	101,448	483,033.96	4.7614	173,115	894,236.32	5.1656	274,563	1,377,270.28	5.0162
51 Ironwork		96,329.28			446,698.68			543,027.96	
52 Back filling	38,716	18,326.74	.4734	545,096	109,167.05	.2003	583,812	127,493.79	.2184
Total		$751,443.10			$3,648,328.90			$4,399,772.00	

*Indicates credit.

Table 1—(*Continued.*)

Items.	Fourth Quarter, Fiscal Year, 1911.			To March 31, 1911.			Total to June 30, 1911.		
	Quantities.	Amount.	Unit Cost.	Quantities.	Amount.	Unit Cost.	Quantities.	Amount.	Unit Cost.
La Boca Locks and Dams (abandoned)—									
53 Dry excavation				78,233	$158,343.29	$2.0240	78,233	$158,343.29	2.0240
54 Construction ,dam					315,350.07			315,350.07	
55 Construction, locks					159,306.40			159,306.40	
Total					$632,999.76			$632,999.76	
56 Naos Island breakwater		$6,649.41			$51,456.65			$58,106.06	
Total construction cost, Pacific Division		$1,783,178.11			$17,038,668.61			$18,821,846.72	
57 Plant and equipment to be absorbed in construction costs after June 30, 1911								$2,765,795.11	
Total expenditures, Pacific Division								$21,587,641.83	
Total expenditures, constr. and engr'n'g								$123,386,129.78	

Item 24—*Colon Breakwater*. The low cost for the quarter is due to the return to the storehouse of piling and timber, which had been previously charged to the work, but not used.

Item 28—*Dredging Excavation, prism*. Preliminary surveys.

Item 32—*Dredging Excavation, prism*. With the accounts for the month of April, the total cost of the dredging plant had been absorbed into the work; hence no arbitrary for plant is charged in this quarter.

Item 42—*Miraflores Dams and Spillway*. Hydraulic filling. Expenditures represent cost of pipe lines, flumes, etc., 582,732 cubic yards have been deposited in Dam from dredging and hydraulic excavations in lock chamber and in prism below the locks, the total expenditures therefor being charged to "excavation."

Items 53, 54, and 55. These expenditures were incurred prior to the adoption of Miraflores as the site for the lower locks and dams, at the Pacific entrance of the Canal.

Items 25, 30, and 57—*Plant*. The expenditures for plant and equipment are absorbed into construction costs on the basis of estimated total cost of plant, and the estimated quantities of work to be done. The amount under these items represent the balances which are to be absorbed into construction costs after June 30, 1911.

General—When excavated material is used in filling, such as dams, back filling, etc., the cost of dumping only is charged to the items benefited, all other expenses being charged to "excavation."

DAM CONSTRUCTION.

Table No. 2.

Detailed cost per cubic yard for quarter ending June 30, 1911:

Items.	Gatun Dam.				Miraflores Dam.			
	April.	May.	June.	Total.	April.	May.	June.	Total.
Dry Fill—Quantities—cubic yards	205,130	207,751	227,996	640,877	67,260	30,032	28,315	125,607
Excavation	$0.0279	$0.0255	$0.0287	$0.0274				
Clearing site	.0007	.0005	.0006	.0006				
Tracks	.0473	.0537	.0332	.0444	$0.0293	$0.0889	$0.0619	$0.0509
Trestles	.0134	.0013	.0018	.0054				
Transportation	.1358	.1113	.1149	.1204	.0397	.0634	.0627	.0505
Filling	.0900	.0922	.0848	.0888	.0354	.0983	.1125	.0678
Maintenance of equipment	.0456	.0259	.0274	.0327	.0074	.0284	.0435	.0206
Plant arbitrary	.0979	.0946	.0966	.0963	.1700	.1700	.1700	.1700
Division expense	.0112	.0120	.0127	.0120	.0052	.0145	.0139	.0094
Total division cost	$0.4698	$0.4170	$0.4007	$0.4280	$0.2870	$0.4635	$0.4645	$0.3692
Administrative and general expense	.0316	.0357	.0219	.0295	.0163	.0385	.0281	0242
Total cost	$0.5014	$0.4527	$0.4226	$0.4575	$0.3033	$0.5020	$0.4926	$0.3934
Hydraulic Fill—Quantities—cubic yards	368,658	419,348	432,008	1,220,014				
Clearing site	$0.0007	$0.0005	$0.0006	$0.0006				
Clearing for dredge	.0123	.0070	.0034	.0073				
Dredging	.0693	.0685	.0678	.0684				
Relay pumps	.0088	.0139	.0077	.0102				
Pipe lines	.0084	.0110	.0449	.0222				
Wood flumes	.0018	.0026	.0428	.0024				
Power	.0374	.0450	.0028	.0419				
Small boats	.0023	.0015	.0016	.0018				
Maintenance of equipment	.0194	**†.0672**	.0325	**†.0057**				
Plant arbitrary	.0500	.0500	.0500	.0500				
Division expense	.0045	.0042	.0044	.0044				
Total division cost	$0.2149	$0.1370	$0.2585	$0.2035				
Administrative and general expense	.0151	.0140	.0150	.0147				
Total cost	$0.2300	$0.1510	$0.2735	$0.2182				

Items.	Colon Breakwater.			
	April.	May.	June.	Total.
Excavation—Quantities—Cubic yards	40,699	38,534	46,664	125,897
Surveys	$0.0254	$0.0192	$0.0036	$0.0155
Clearing	**†.0045**		.0024	**†.0006**
Drilling	.0545	.0655	.0310	.0491
Blasting	.2761	.2803	.2028	.2502
Loading by power	1191	.0569	.0652	.0801
Tracks	.4132	.0203	.0785	.1689
Transportation	.1135	.1174	.1039	.1111
Maintenance of equipment	.0330	.0900	.0658	.0626
Total	$1.0303	$0.6496	$0.5532	$0.7369

Items.	Colon Breakwater—*Cont'd.*			
	April.	May.	June.	Total.
Filling—Quantities—Cubic yards	40,699	38,534	46,664	125,897
Trestles	$0.1661	**†2.0907**	$0.2441	**†$0.4957**
Dumping	.0215	.0272	.0116	.0196
Maintenance of equipment	.0171	.0165	.0148	.0160
Total	$0.2047	**†$2.0470**	$0.2705	**†$0.4601**
Plant arbitrary	$0.1690	$0.1690	$0.1690	$0.1690
Division expense	.0378	.0384	.0347	.0534
Tug service	.0691	.0643	.0309	.0369
Total division cost	$1.5109	**†$1.1257**	$1.0583	$0.5361
Administrative and general expenses	.2046	.1569	.1046	.1529
Grand total	$1.7155	**†$0.9688**	$1.1629	$0.6890

*Credit under trestles in May is due to material, already charged into the work, being returned to Quartermaster's Department. This was done in order to determine the actual cost to May 31, 1911.

†Indicates credit.

LOCKS AND SPILLWAYS CONSTRUCTION.

Table No. 3.

Detailed cost per cubic yard for quarter ending June 30, 1911:

Items.	Gatun Spillway.				Gatun Locks.				Pedro Miguel Locks.				Miraflores Locks.			
	April.	May.	June.	Total.	April.	May.	June.	Total.	April.	May.	June.	Total.	April.	May.	June.	Total.
Dry excavation—Quantities—cubic yards	......	......	......	......	......	......	......	......	......	......	4,536	4,536	77,521	56,295	36,743	170,559
Drilling	......	......	......	......	......	......	......	......	......	......	$0.0871	$0.0871	$0.0381	$0.1233	$0.1199	$0.0839
Blasting	......	......	......	......	......	......	......	......	......	......	.0041	.0041	.0813	.0510	.0652	.0678
Loading by power	......	......	......	......	......	......	......	......	......	......	.2221	.2221	.0993	.1221	.1054	.1081
Tracks	......	......	......	......	......	......	......	......	......	......	.1175	.1175	1515	.2138	.1730	.1767
Transportation	......	......	......	......	......	......	......	......	......	......	.1550	.1550	.0533	.0864	.0736	.0686
Dumps	......	......	......	......	......	......	......	......	......	......	......	......	......	.0227	.0587	.0201
Trestles	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Pumps	......	......	......	......	......	......	......	......	......	......	.0491	.0491	......	.0391	.0290	.0192
Power	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Maintenance of equipment	......	......	......	......	......	......	......	......	......	......	.1399	.1399	.0436	.0520	.0890	.0562
Plant arbitrary	......	......	......	......	......	......	......	......	......	......	.0009	.0009	.0900	.0900	.0900	.0900
Division expense	......	......	......	......	......	......	......	......	......	......	.0379	.0379	.0163	.0321	.0322	.0249
Total division cost	......	......	......	......	......	......	......	......	......	......	$0.8136	$0.8136	$0.5734	$0.8325	$0.8360	$0.7155
Admin. and general expense	......	......	......	......	......	......	......	......	......	......	.0749	.0749	.0613	.0891	.0672	.0717
Total cost	......	......	......	......	......	......	......	......	......	......	$0.8885	$0.8885	$0.6347	$0.9216	$0.9032	$0.7872
Preparing foundations, excavation—Quantities—cubic yards.	1,778	2,051	115	3,944	23,186	14,685	4,725	42,596	255	5,520	2,918	8,693	2,230	1,680	1,280	5,190
Drilling	$0.0777	......	......	$0.0350	$0.1100	$0.1210	$0.2092	$0.1248	$4.8913	$0.2759	$0.4840	$0.4811	$0.7892	$0.9206	$0.2681	$0 7031
Blasting	.0301	......	......	.0135	.0883	.0989	.2806	.1133	.9515	.0668	.1589	.1237	.2062	.1657	.0169	.1464
Loading by power	†.2740	.2182	.9983	.0191	.1048	.1301	.1016	.1132	1.0446	.2767	......	.2064	......	......	......	......
Loading by hand	.4310	1.2793	11.6028	1.1979	.2690	.2973	.9065	.3495	1.0351	.7267	1.1463	.8766	1 7823	1.7760	1.3966	1.6852
Tracks	.0195	.0213	.2978	.0286	.1325	.2480	.0085	.1635	3.3067	.0439	.2546	.2103	.0514	.1025	.0346	.0638
Transportation	.0435	.0206	......	.0303	.1853	.3166	.3495	.2438	.0631	.0484	.0377	.0452	.....	.2877	.4234	.1975
Pumps	......	.0042	......	.0022	.2982	.1299	.1173	.2201	.0306	.0411	.0490	.0435	.0419	.0391	.0290	.0378
Maintenance of equipment	.0355	.2081	.9937	.1532	.1840	.2404	.2292	.2084	.1097	.2553	.0675	.1880	.1386	.3171	.3186	.2408
Coffer dams	.2376	.6061	5.8043	.5915	......	......	......	......	......	......	......	......	......	......	......	......
Plant arbitrary	.1190	.1190	.1190	.1190	.1190	.1190	.1190	.1190	.0033	.0095	.0009	.0065	.0900	.0900	.0900	.0900
Division expense	.0619	.1538	1.6020	.1546	.0698	.0761	.1507	.0810	.4890	.0889	.1357	.1163	.1832	.2026	.1316	.1768
Total division cost	$0.7818	$2.6306	21.4179	$2.3449	$1.5609	$1.7773	$2.4721	$1.7366	11.9249	$1.8332	$2.3346	$2.2976	$3.2828	$3.9013	$2.7088	$3.3414
Admin. and general expense	.1189	.4106	2.7043	.3460	.1842	.2061	.2608	.2003	1.4805	.2236	.2588	.2722	.4343	.4979	.2618	.4124
Total cost	$0.9007	$3.0412	24.1222	$2.6909	$1.7451	$1.9834	$2.7329	$1.9369	13.4054	$2.0568	$2.5934	$2.5698	$3.7171	$4 3992	$2.9706	$3.7538
Preparing foundations, concrete piling—Quantities—lin. ft.	......	......	......	......	2,544	5,424	228	8,196	......	......	......	......	......	......	......	......
Concrete piles in place	......	......	......	......	$1.6712	$1.9814	10.5473	$2.1234	......	......	......	......	......	......	......	......
Maintenance of equipment	......	......	......	......	.0861	.0291	.7611	.0679	......	......	......	......	......	......	......	......
Division expense	......	......	......	......	.0050	.0115	.4125	.0207	......	......	......	......	......	......	......	......
Total division cost	......	......	......	......	$1.7623	$2.0220	11.7209	$2.2120	......	......	......	......	......	......	......	......
Admin. and general expense	......	......	......	......	.0694	.0369	1.1339	.0775	......	......	......	......	......	......	......	......
Total cost	......	......	......	......	$1 8317	$2.0589	12.8548	$2.2895	......	......	......	......	......	......	......	......
Masonry.																
Concrete—Quantities—cubic yds.	4,169	3,656	4,830	12,655	62,021	60,818	49,293	172,132	28,635	18,905	17,875	65,415	38,758	36154	26,536	101,448
Cement	$1.9118	$1.6243	$1.7286	$1.7588	$1.7466	$1.4229	$1.5919	$1.5879	$1.7282	$1.1894	$1.5756	$1.5307	$1.5457	$1.2126	$1.8819	$1.5149
Stone	1.6440	1.6915	1.7076	1.6820	1.8513	1.9407	1.9641	1.9152	.8000	.7812	.7812	.7894	.8184	.7812	.7812	.7954
Sand	.8328	.6247	.6766	.7130	.8087	.7019	.8946	.7955	.4089	.4042	.3901	.4025	.4089	.4042	.3901	.4023
Mixing	.3250	.2959	.2741	.2972	.1783	.1904	.1814	.1835	.2649	.2241	.3065	.2645	.4053	.3204	.3577	.3626
Total cost	$4.7136	$4.2364	$4.3869	$4.4510	$4.5849	$4.2559	$4.6320	$4.4821	$3.2020	$2.5989	$3.0534	$2.9871	$3.1783	$2.7184	$3.4109	$3.0752
Large Rock—Quantities—cubic yards	......	......	......	......	3,735	5,407	4,611	13,753	......	......	213	213	......	......	......	......
Cost	......	......	......	......	$1.5588	$2.3514	$0.9705	$1.6732	......	......	$0.2808	$0.2865	......	......	......	......
Masonry—Quantities—cubic yards	4,169	3,656	4,830	12,655	65,756	66,225	53,904	185,885	28,635	18,905	18,088	65,628	38,758	36,154	26,536	101,448
Concrete	$4.7136	$4.2364	$4.3869	$4.4510	$4.3245	$3.9085	$4.2357	$4.1505	$3.2020	$2.5989	$3.0174	$2.9774	$3.1783	$2.7184	$3.4109	$3.0752
Large rock	......	......	......	......	.0886	.1920	.0831	.1238	.....	......	.0033	.0009	......	......	......	......
Wood forms	.5776	1.0276	.5220	.6864	.4006	.4242	.4182	.4141	.8073	.5411	.5603	.6625	.3031	.2882	.7931	.4260
Steel forms	......	......	......	......	.1637	.1167	.1701	.1488	.0220	.0094	.0093	.0149	.0500	.0315	.0306	.0383
Placing	.4298	.6132	.4604	.4945	.3241	.3204	.3608	.3334	.4112	.5373	.4328	.4534	.1622	.2193	.2553	.2070
Reinforcements	.0006	.0020	.0933	.0364	.0068	.0452	.0126	.0222	.0171	.2026	.0692	.0849	.0187	.0585	.0552	.0424
Pumps	.0122	......	......	.0040	.0373	.1129	.0925	.0803	.0305	.0416	.0485	.0387	.0419	.0391	.0290	.0375
Power	......	......	......	......	.0661	.0826	.0497	.0672	.0416	.0588	.0406	.0463	.0111	.0218	.0397	.0224
Coffer dams	.2703	†.1546	.0461	.0620	......	......	......	......	......	......	......	......	......	......	......	......
Maintenance of equipment	.2807	.0550	.1076	.1495	.2116	.1912	.3474	.2437	.1862	.2850	.2139	.2223	.1046	.1834	.2037	.1586
Plant arbitrary	.4670	.4670	.4670	.4670	.7110	.7110	.7110	.7110	.7172	.7362	.7140	.7218	.4100	.4100	.4100	.4100
Division expense	.1184	.0880	.0869	.0975	.0736	.0701	.0918	.0776	.0905	.1066	.1022	.0984	.0703	.0762	.1002	.0802
Total division cost	$6.8702	$6.3346	$6.1702	$6.4483	$6.4079	$6.1748	$6.5729	$6.3726	$5.5256	$5.1175	$5.2115	$5.3215	$4.3502	$4.0464	$5.3277	$4.4976
Admin. and general expense	.3157	.3289	.3453	.3308	.2390	.2493	.2744	.2530	.2887	.4032	.2964	.3238	.1828	.3107	.3182	.2638
Total cost	$7.1859	$6.6635	$6.5155	$6.7791	$6 6469	$6.4241	$6.8473	$6.6256	$5.8143	$5.5207	$5.5079	$5.6453	$4.5330	$4.3571	$5.6459	$4.7614
Masonry, reinforced—Quantities—cubic yards	......	......	......	......	1,605	1,619	1,401	4,625	......	230	155	385	......	......	......	......
Cement	......	......	......	......	$2.3717	$1.9827	$2.1590	$2.1711	......	$2.0777	$3.0798	$2.4811	......	......	......	......
Stone	......	......	......	......	1.5383	1.6859	1.7935	1.6673	......	.7816	.7479	.7680	......	......	......	......
Sand	......	......	......	......	.5939	.6928	.9408	.7336	......	.4038	.3641	.3878	......	......	......	......
Wood forms	......	......	......	......	1.3140	2.4803	4.3088	2.6295	......	6.4993	6.4076	6.4624	......	......	......	......
Steel forms	......	......	......	......	.3503	.3712	.8967	.5231	......	......	......	......	......	......	......	......
Mixing	......	......	......	......	.9018	1.2437	1.2891	1.1388	......	.2436	2.2706	1.0597	......	......	......	......
Placing	......	......	......	......	.8059	1.0721	.8238	.9045	......	*	1.9612	.7896	......	......	......	......
Reinforcements	......	......	......	......	.3928	.7686	.7558	.6343	......	1.0289	9.1199	4.2863	......	......	......	......

†Indicates credit.

Table No. 3—*(Continued)*

Items.	Gatun Spillway.				Gatun Locks.				Pedro Miguel Locks.				Miraflores Locks.			
	April.	May.	June.	Total.	April.	May.	June.	Total.	April.	May.	June.	Total.	April.	May.	June.	Total.
Mosonry, reinforced—(Continued)																
Maintenance of equipment	......	......	......	......	.0666	.2457	.1512	.1549	......	......	.0084	.0034	......	......	......	......
Plant arbitrary	......	......	......	......	.7110	.7110	.7110	.7110	......	.6900	.6900	.6900	......	......	......	......
Division expense	......	......	......	......	.2514	.2754	.3968	.3038	......	.6258	1.0941	.8143	......	......	......	......
Total division cost	......	......	......	......	$9.2977	11.5294	14.2265	11.5719	......	12.3507	25.7436	17.7426	......	......	......	......
Admin. and general expense	......	......	......	......	.7195	1.0826	1.4230	1.0597	......	1.6400	2.5546	2.0082	......	......	......	......
Total cost	......	......	......	......	10.0172	12.6120	15.6495	12.6316	......	13.9907	28.2982	19.7508	......	......	......	......
Total Mosonry—Quantities—cubic yards	4,169	3,656	4,830	12,655	67,361	67,844	55,305	190,510	28,635	19,135	18,243	66,013	38,758	36,154	26,536	101,448
Total cost	$7.1859	$6.6635	$6.5155	$6.7791	$6.7272	$6.5718	$7.0702	$6.7714	$5.8143	$5.6224	$5.7016	$5.7276	$4.5330	$4 3571	$5.6459	$4.7614
Back filling—Quantities—cubic yards	595	1,292	3,830	5,717	77,880	65,608	49,796	193,284	61,379	14,420	18,871	94,670	6,540	16,021	16,155	38,716
Excavation	$1.2414	$0.0449	$0.0679	$0.1849	......	......	......	......	......	......	......	......	......	......	......	......
Blasting	......	......	......	......	......	$0.0011	$0.0003	$0.0013	......	......	......	......	......	$0.0044	......	$0.0018
Loading	......	......	......	......	$0.0222	.0270	.0250	.0237	......	$0.0020	$0.0236	$0.0050	......	.0076	$0.0022	.0041
Tracks	3.0818	.5523	.2324	.6012	.0429	.0447	.1425	.0692	$0.0609	.3505	0246	.0978	$0.0015	.0057	.1323	.0578
Transportation	......	......	......	......	.0309	.0546	.0552	.0452	.0324	.0833	.0849	.0505	......	.0609	.0642	.0520
Filling	.0514	.1756	.1741	.1616	.0539	.0746	.1581	.0878	.0709	1678	.2191	.1152	.2810	.1390	.1526	.1687
Maintenance of equipment	......	......	......	......	.0421	.0253	.0496	.0383	.0067	.0421	.0592	.0226	.0107	.0230	.0465	.0307
Plant arbitrary	......	......	.0227	.0152	.0241	.0292	.0193	.0246	.1000	.1000	.1000	1000	.1000	.1000	.1000	.1000
Division expense	.2502	.0322	.0312	.0542	.0103	.0114	.0255	.0146	.0073	.0280	.0180	.0126	.0198	.0157	.0195	.0180
Total division cost	$4.6248	$0.8050	$0.5283	$1.0171	$0.2264	$0.2679	$0.4755	$0.3047	$0.2782	$0.7737	$0.5294	$0.4037	$0.4130	$0.3563	$0.5173	$0.4331
Admin. and general expense	.6442	.1118	.0632	.1347	.0266	.0325	.0514	.0350	.0221	.0675	.0345	.0315	.0467	.0365	.0415	.0403
Total cost	$5.2690	$0.9168	$0.5915	$1.1518	$0.2530	$0.3004	$0.5269	$0.3397	$0.3003	$0.8412	$0.5639	$0.4352	$0.4597	$0.3928	$0.5588	$0.4734
Filling center woll—Quantities—cubic yards	......	......	......	......	......	......	2,717	2,717	......	......	......	......	......	......	......	......
Loading	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Tracks	......	......	......	......	......	......	$0.0084	$0.0084	......	......	......	......	......	......	......	......
Transportation	......	......	......	......	......	......	.8028	.8028	......	......	......	......	......	......	......	......
Filling	......	......	......	......	......	......	.2042	.2042	......	......	......	......	......	......	......	......
Maintenance of eqiupment	......	......	......	......	......	......	.0016	.0016	......	......	......	......	......	......	......	......
Plant arbitrary	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Division expense	......	......	......	......	......	......	.0464	.0464	......	......	......	......	......	......	......	......
Total division cost	......	......	......	......	......	......	$1.0634	$1.0634	......	......	......	......	......	......	......	......
Admin. and general expense	......	......	......	......	......	......	.0780	.0780	......	......	......	......	......	......	......	......
Total cost	......	......	......	......	......	......	$1.1414	$1.1414	......	......	......	......	......	......	......	......

*Placing of "Masonry reinforced" was charged to "Masonry" in May, no separate account having been kept.

DRY EXCAVATION—PRISM.

Table No. 4.

Detailed cost per cubic yard for quarter ending June 30, 1911:

Items.	Atlantic Division.				Central Division.				Pacific Division.			
	April.	May.	June.	Total.	April.	May.	June.	Total.	April.	May.	June.	Total.
Dry excavation—Quantities—cubic yards	74,030	58,982	55,657	188,669	1,485,039	1,300,463	1,401,016	4,186,518	45,864	33,445	75,466	154,775
Drilling	$0.0337	$0.0448	$0.0408	$0.0393	$0.0492	$0.0586	$0.0554	$0.0542	$0.0083	$0.0841	$0.0870	$0.0631
Blasting	......	.1057	.0652	.0523	.0670	.0792	.0576	.0676	.0528	.0329	.0478	.0461
Loading by power	.0649	.0717	.0601	.0656	.0535	.0559	.0421	.0504	.1153	.1464	.1171	.1229
Tracks	0580	.0489	.0493	.0526	.0773	.0853	.0821	.0814	.1731	.1522	.1300	.1475
Transportation	.0989	.1572	.1646	.1364	.0637	.0883	.0737	.0747	.0549	.1040	.0924	.0838
Dumps	......	......	......	......	.0437	.0449	.0440	.0442	.0257	.0497	.0454	.0405
Pumps	......	......	......	......	.0055	.0053	.0042	.0050	.0381	.0399	.0336	.0363
Maintenance of equipment	.0744	.0460	.0959	.0719	.0901	.1030	.1011	.0978	.0506	.0810	.0992	.0809
Plant arbitrary	.1190	.1190	.1190	.1190	.1000	.1000	.1000	.1000	.1011	.1037	.1002	.1012
Division expense	.0147	.0188	.0202	.0176	.0121	.0117	.0112	.0117	.0190	.0327	.0292	.0269
Total division cost	$0.4636	$0.6121	$0.6151	$0.5547	$0.5621	$0.6322	$0.5714	$0.5870	0.6389	$0.8266	$0.7819	$0.7492
Administrative and general expense	.0411	.0595	.0366	.0455	.0447	.0570	.0426	.0478	.0697	.0877	.0607	.0692
Total cost	$0.5047	$0.6716	$0.6517	$0.6002	$0.6068	$0.6892	$0.6140	$0.6348	$0.7086	$0.9143	$0.8426	$0.8184
Dry excavation—Prism, by contract—Quantities—cubic yards	......	......	......	......	31,400	28,420	32,288	92,108	......	......	......	......
Contract cost	......	......	......	......	$0.2120	$0.3503	$0.2966	$0.2843	......	......	......	......
Plant arbitrary	......	......	......	......	.1000	.1000	.1000	.1000	......	......	......	......
Total cost	......	......	......	......	.3120	.4503	.3966	.3843	......	......	......	......
Total dry excavation—Quantites—cubic yards	74,030	58,982	55,657	188,669	1,516,439	1,328,883	1,433,304	4,278,626	45,864	33,445	75,466	154,775
Unit cost	$0.5047	$0.6716	$0.6517	$0.6002	$0.6007	$0.6841	$0.6091	$0.6294	$0.7086	$0 9143	$0.8426	$0.8184

DREDGING EXCAVATION—PRISM.

Table No. 5.

Detailed cost per cubic yard for quarter ending June 30, 1911:

Items.	Atlantic Division.								Pacific Division.							
	April.		May.		June.		Total.		April		May.		June.		Total.	
	Quantities, cu. yds.	Unit cost	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.
Pipe lines																
Dykes																
Clearing	487,174	$0.0003					1,444,450	$0.0001	406,113	$0 0001						
Op'n, seagoing suction dredge	364,320	.0321	356,943	$0.0296	300,337	$0.0310	1,021,600	0309	176,521	.0559	224,363	$0.0409	220,786	$0.0414	621,670	$0.0453
R'p'rs, seagoing suction dredge	364,320	0073	356,943	.0057	300,337	0138	1,021,600	.0087	176,521	0554	224,363	0160	220,786	.0051	621,670	.0233
Operation, ladder dredges	76,072	1242	123,142	.0746	81,036	0992	280,250	0952	179,631	1055	221,629	0465	229,962	.0469	631,222	0634
Repairs, ladder dredges	76,072	0484	123,142	.0336	81,036	1149	280,250	0611	179,631	.0456	221,629	0423	229,962	†.0060	631,222	.0251
Operation, dipper dredges	37,782	0904	34,093	.1729	70,725	.1307	142,600	1301	49,961	1017	83,702	0545	71,494	.0677	205,157	0706
Repairs, dipper dredges	37,782	0390	34,093	.2837	70,725	0720	142,600	1139	49,961	0373	83,702	0190	71,494	.0513	205,157	.0347
Operation, pipe line dredges																
Repairs, pipe line dredges																
Op'n, tugs, clapets and scows	113,854	1422	157,235	.0680	151,761	.0614	422,850	.0856	229,592	0734	305,331	0573	301,456	0616	836,379	.0633
R'p'rs, tugs, clapets, and scows	113,854	1084	157,235	.0526	151,761	.0476	422,850	.0658	229,592	.0298	305,331	0229	301,456	†.0080	836,379	.0137
Drilling	34,549	.0581	42,520	.0504	20,443	.1429	97,512	.0725	20,563	0144	23,190		3,050		46,803	.0063
Blasting	34,459	.0886	42,520	.0691	20,443	3046	97,512	1252	20,563	0019	23,190		3,050		46,803	0008
Operation, drill barges									20,563	.4766	23,190	4808	3,050	3,5938	46,803	6818
Operation, rock breakers									20,563	0691	23,190	0631	3,050	.4991	46,803	.0942
Small boats	478,174	.0027	514,178	.0016	452,098	.0031	1,444,450	.0024	406,113	0038	529,694	0023	522,242	.0026	1,458,049	.0028
Repairs, misc. equipment	478,174	.0012	514,178	.0035	452,098	0012	1,444,450	.0020	406,113	0042	529,694	0012	522,242	†.0008	1,458,049	.0013
Plant arbitrary	478,174	.0610	514,178	.0610	452,098	0610	1,444,450	.0610								
Division expense	478,174	.0061	514,178	.0054	452,098	.0185	1,444,450	0061	406,113	0061	529,694	0046	522,242	†.0011	1,458,049	.0030
Total division cost	478,174	$0.2333	514,178	$0.2023	452,098	$0.2335	1,444,450	$0.2221	406,113	$0.2333	529,694	$0.1509	522,242	$0.1089	1,458,049	$0.1588
Admin. and general expense	478,174	.0209	514,178	.0178	452,098	.0185	1,444,450	.0191	406,113	0357	529,694	.0227	522,242	.0153	1,458,049	.0237
Total cost	478,174	$0.2542	514,178	$0.2201	452,098	$0.2520	1,444,450	$0.2413	406,113	$0.2690	529,694	$0.1736	522,242	$0.1242	1,458,049	$0.1825
Earth excavation—per cent	443,625	92.77	471,658	91.73	431,655	95.48	1,346,938	93.25	385,550	94.94	506,504	95 62	519,192	99.42	1,411,246	96.79
Rock excavation—per cent	34,549	7 23	42,520	8.27	20,443	4 52	97,512	6 75	20,563	5.06	23,190	4.38	3,050	.58	46,803	3.21

NOTE—*The total cost of the Dredging Plant had been absorbed at the close of April, hence no charge appears for this quarter.
†Indicates credit.

STONE PRODUCTION.

Table No. 6.

Detailed cost per cubic yard for quarter ending June 30, 1911:

	Porto Bello Quarry.				Ancon Quarry.			
	April.	May.	June.	Total.	April.	May.	June.	Total
Quarrying—Quantities—cubic yards	68,746	58,483	60,704	187,933	58,279	58,893	62,997	*227,821
Stripping	$0.0259	$0.0173	$0.0029	$0 0158	$0 1010	$0.0684	$0.0442	$0.0557
Drilling	.0375	.0376	0355	0369	.0472	.0515	.0518	0397
Blasting	.1373	.1810	1701	.1615	0384	0437	.0438	0332
Loading	.0728	.0812	.0803	0778	0477	.0437	.0347	0331
Transportation	.0613	.0693	0666	0655	.0956	.0905	0568	0636
Tracks	.0220	.0727	0400	0436	0355	0268	0347	0256
Power	.0197	.0244	0223	0220				
Maintenance of equipment	.0542	.0945	.1189	.0876	.0616	.0252	.0324	0312
Plant arbitrary	.3300	.3300	.3300	3300	.2400	2400	.2400	.2400
Total	$0.7607	$0.9080	$0.8666	$0.8407	$0.6670	$0.5898	$0.5384	$0.5221
Crushing—Quantities—cubic yards	68,746	58,483	60,704	187,933	58,279	58,893	62,997	227,821
Operation, crushers	$0.0246	$0.0360	$0.0266	$0.0288	$0.0225	$0.0200	$0.0164	$0.0155
Stone bins and conveyors	.0219	.0209	.0165	0198	.0034	0051	.0037	.0032
Power	.0421	.0522	.0476	0470	.0147	0206	.0207	.0148
Maintenance of equipment	.1212	.1068	.0939	.1079	.0352	0292	.0643	.0343
Plant arbitrary	.1700	.1700	.1700	.1700	0740	0752	0747	.0737
Total	$0.3798	$0.3859	$0.3546	$0.3735	$0.1498	$0.1501	$0.1798	$0.1415
Total cost of production	$1.1405	$1.2939	$1.2212	$1 2142	$0 8168	$0 7399	$0 7182	$0.6636
Towing—Quantities—cubic yards	68,746	58,483	60,704	187,933				
Operation, tugs and barges	$0.1833	$0.1675	$0.1594	$0.1706				
Maintenance and equipment	.1345	.1713	.1490	.1507				
Plant arbitrary	.1710	.1710	.1710	.1710				
Total	$0.4888	$0.5098	$0.4794	$0.4923				
Unloading—Quantities—cubic yards	68,746	58,483	60,704	187,933				
Operation, cableways and cranes	$0.1093	$0.1086	$0.1300	$0.1158				
Power	.0184	.0212	.0181	.0192				
Maintenance of equipment	.0627	.1180	.1056	.0937				
Plant arbitrary	.2070	.2070	.2070	.2070				
Total	$0.3974	$0.4548	$0.4607	$0.4357				
Rail transportation to storage—Quantities—cubic yards	24,115	20,996	21,529	66,640	58,729	58,893	62,997	227,821
Operation of trains	$0.0756	$0.1107	$0.0992	$0.0943	$0.0379	$0.0377	$0.0423	$0.0312
Repairs to tracks	.0149	0137	.0129	.0139		.0095	0023	.0031
Dumping in storage					.0081	.0068	.0104	.0067
Maintenance of equipment	.0806	.0727	.0701	.0747	.0061	.0136	.0274	.0126
Plant arbitrary					.0600	.0600	.0600	.0600
Total	$0.1711	$0.1971	$0 1822	$0.1829	$0.1121	$0.1276	$0.1424	$0.1136
Division expense	$0.0281	$0.0307	$0.0337	$0.0307	$0.0253	$0.0244	$0.0203	$0.0184
Total cost in storage	$2.1148	$2.3600	$2.2596	$2.2379	$0.9542	$0.8919	$0.8809	$0.7956

*NOTE—Under "Total Quantities" 47,652 cubic yards have been added, to adjust the difference between cross section measurements of stock pile and book balances. This amount was not added to monthly quantities.

SAND PRODUCTION.

Table No. 7.

Detailed cost per cubic yard for quarter ending June 30, 1911:

Items.	Nombre de Dios.				Chamé.			
	April.	May.	June.	Total.	April.	May.	June.	Total.
Dredging—Quantities—cubic yards	47,801	40,003	24,236	112,040	36,663	35,903	38,954	†124,372
Operation, dredges	$0.1548	$0.2188	$0.3057	$0.2103	$0.1265	$0.1091	$0.1170	$0.1054
Maintenance of equipment	.0129	.0085	.0538	.0202	.0464	.0255	.0338	.0316
Total	$0.1677	$0.2273	$0.3595	$0.2305	$0.1729	$0.1346	$0.1508	$0.1370
Plant arbitrary	$0.4800	$0.4800	$0.4800	$0.4800	$0.0300	$0.0300	$0.0300	$0.0300
Total cost of production	$0.6477	*$0.6945	$0.8395	*$0.7059	$0.2029	$0.1646	$0.1808	$0.1670
Towing—Quantities—cubic yards	47,801	40,003	24,236	112,040	36,663	35,903	38,954	124,372
Operation, tugs and barges	$0.1875	$0.1806	$0.2380	$0.1960	$0.1213	$0.1238	$0.1085	$0.1055
Maintenance of equipment	.1407	.1809	.1707	.1615	.0653	.0134	.0453	.0373
Plant arbitrary	.2110	.2110	.2110	.2110	.0700	.0700	.0700	.0700
Total	$0.5392	$0.5725	$0.6197	$0.5685	$0.2566	$0.2072	$0.2238	$0.2128
Unloading—Quantities—cubic yards	47,801	40,003	24,236	112,040	36,663	35,903	38,954	124,372
Operation, cableways and cranes	$0.1114	$0.1118	$0.1419	$0.1181	$0.0594	$0.0620	$0.0729	$0.0582
Power	.0162	.0192	.0157	.0172	.0312	.0308	.0273	.0267
Maintenance of equipment	.0571	.1104	.1045	.0864	.0603	.0417	.0383	.0418
Plant arbitrary	.1620	.1620	.1620	.1620	.1044	.1040	.1032	.1035
Total	$0.3467	$0.4034	$0.4241	$0.3837	$0.2553	$0.2385	$0.2417	$0.2302
Rail Transportation to Storage—Quantities—cubic yards	12,133	17,517	11,957	41,607	36,663	35,903	38,954	124,372
Operation of trains	$0.1342	$0.1107	$0.1034	$0.1155	$0.0487	$0.0517	$0.0473	$0.0441
Repairs to tracks	.0265	.0137	.0134	.0173	.0275	.0376	.0423	.0322
Dumping in storage	....	....	....	....	.0065	.0123	.0131	.0096
Maintenance of equipment	.1432	.0727	.0732	.0934	.0079	.0195	.0311	.0177
Plant arbitrary	....	....	....	....	.0800	.0800	.0800	.0800
Total	$0.3039	$0.1971	$0.1900	$0.2262	$0.1706	$0.2011	$0.2138	$0.1836
Division expense	$0.0061	$0.0065	$0.0125	$0.0290	$0.0131	$0.0152	$0.0160	$0.0132
Total lost in storage	$1.6168	$1.7632	$1.9895	$1.7497	$0.8985	$0.8266	$0.8761	$0.8068

*Dry excavation is credited with $515.25 in May on account of adjustment, but no yardage was accomplished. The total cost of production includes this amount and, for this reason, the cost of dredging, plus plant charge, does not equal total cost of production.

†NOTE.—Under "Total Quantities," 12,852 cubic yards have been added, to adjust the difference between cross section measurements of stock piles and book balances. This amount was not added to monthly quantities.

HYDRAULIC EXCAVATION—PRISM.

Table No. 8.

Items.	Atantic Division.				Pacific Division.			
	April.	May.	June.	Total.	April.	May.	June.	Total.
Quantities—cubic yards	5,350	5,500	3,500	14,350	33,509	18,353	53,858	105,720
Pumping station	....	....	....	....	$0.1794	$0.2815	$0.1036	$0.1585
Pipe lines and monitors	....	....	....	....	.1060	.1413	.0949	.1065
Dredging pumps	$0.1291	$0.3231	$0.5705	$0.3111	.1175	.1457	.0731	.0997
Relay pumps	....	....	....	....	....	....	....	....
Dykes	....	....	....	....	....	....	....	....
Maintenance of equipment	....	....	....	....	.0772	.0923	.0771	.0798
Power	....	....	....	....	.2614	.4482	.1919	.2584
Plant arbitrary	....	....	....	....	.0678	.0785	.0608	.0661
Division expense	.0076	.0142	.0318	.0161	.0230	.0336	.0146	.0206
Total division cost	$0.1367	$0.3373	$0.6023	$0.3272	$0.8323	$1.2211	$0.6160	$0.7896
Administrative and general expense	.0176	.0379	.0649	.0369	.0780	.1054	.0379	.0623
Total cost	$0.1543	$0.3752	$0.6672	$0.3641	$0.9103	$1.3265	$0.6539	$0.8519

MANUFACTURING CONCRETE PILES.

Table No. 9.

Items.	Atlantic Division.			
	April.	May.	June.	Total.
Quantities—lineal feet	10,002	5,904	5,760	21,666
Cement	$0.1024	$0.0828	$0.0760	$0.0900
Stone	.0750	.1176	.1145	.0971
Sand	.0178	.0255	.0080	.0173
Mixing	.0358	.1157	.0512	.0617
Placing	.0334	.0711	.0323	.0434
Reinforcements	.8584	.7276	.6346	.7734
Forms	.0922	.0344	.0786	.0729
Maintenance of equipment	.0053	.0054	.0114	.0069
Plant arbitrary	.1794	.1700	.1700	.1743
Division expense	.0114	.0170	.0210	.0155
Total cost	$1.4111	$1.3671	$1.1976	$1,3525

CANAL RECORD

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NOTES OF PROGRESS.

Gates of Gatun Locks.

The erection of a construction bridge over Gatun Locks was begun on January 31 by the contractors who are furnishing and erecting the lock gates. The bridge will be built over the location of the upper guard gates, and is in two sections, one over each of the twin lock chambers, each section being a truss bridge 134 feet 6 inches long and 11 feet wide. Locomotive cranes will operate over this bridge carrying the steel for the gates from a storage yard on the east side of the locks.

Steam Shovel Work at Mindi.

. Steam shovel work was resumed in the Canal prism at Mindi on January 31. This is the excavation which was flooded in the freshet of November, 1909, when three steam shovels were inundated. On October 24, work was begun by suction dredges which removed 401,511 cubic yards of earth up to December 31. The dredge was removed and a dyke was built across the entrance from the French canal in the excavation pit, and two 12-inch vertical centrifugal pumps, mounted on barges, and one old French centrifugal pump, steam driven, began the work of unwatering the pit. On January 31, the water had been lowered to a point where the steam shovel which was working on the highest level could resume excavating. Notwithstanding the fact that the shovels had been immersed in salt water for more than a year, they were in such good condition that only slight repairs were necessary before they could resume work.

Canal Work in January.

The grand total of Canal excavation to February 1 was 129,138,400 cubic yards, leaving to be excavated 53,399,366 cubic yards.

The total for January was 2,772,170 cubic yards, as compared with 2,831,929 cubic yards in January, 1910, and 2,924,551 cubic yards in January, 1909. Of the total, 2,731,336 cubic yards were "work excavation," and 40,834 cubic yards were "plant excavation."

· The dry excavation amounted to 1,734,013 cubic yards and was principally by steam shovel. The dredges removed 1,027,485 cubic yards, and 10,672 cubic yards were sluiced, in addition to the amount pumped into Gatun Dam by suction dredges. The progress on the locks at Gatun, Pedro Miguel and Miraflores is referred to elsewhere in this issue.

In the Atlantic Division, the total excavation was 624,321 cubic yards. Of this total, 65,889 cubic yards were dry excavation, and the remainder was removed by the dredges in the Atlantic entrance.

The total excavation in the Central Division was 1,614,362 cubic yards, and further reference to this work is published elsewhere in this issue.

In the Pacific Division, the total excavation was 533,487 cubic yards, 379,810 cubic yards of which were taken out by the dredges at the Pacific entrance.

A detailed statement of the excavation and a summary of the work on the locks and dams, follow:

ATLANTIC DIVISION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation
Dry excavation—	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*
Locks, Dam and Spillway	65,889		65,889
Mindi	....	....	....
Total	65,889		65,889
Wet excavation—			
Atlantic entrance	520,181	35,054	555,235
Locks, Dam and Spillway	....	3,197	3,197
Total	520,181	38,251	558,432
Total wet and dry excavation	586,070	38,251	624,321

CENTRAL DIVISION.

Dry excavation—			
Culebra Cut	1,347,914	2,583	1,350,497
Chagres section	244,713	....	244,713
Obispo Diversion	8,480	....	8,480
Wet excavation—			
Chagres section	10,672	....	10,672
Total	1,611,779	2,583	1,614,362

PACIFIC DIVISION.

Dry excavation—			
Locks, Dams and Spillways	64,434	....	64,434
Diversions	....	....	....
Prism, south of Pedro Miguel Locks	....	....	....
Total	64,434	....	64,434
Wet excavation—			
Pacific entrance	379,810	....	379,810
Miraflores Locks	89,243	....	89,243
Diversions	....	....	....
Total	469,053	....	469,053
Total wet and dry excavation	533,487	....	533,487

TOTAL CANAL EXCAVATION.

Dry excavation	1,731,430	2,583	1,734,013
Wet excavation	999,906	38,251	1,038,157
Total	2,731,336	40,834	2,772,170

Mean rainfall along Canal (eleven stations) 0.34 inches.

By "Work" Excavation is meant excavation actually made for one of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc.; that is, it represents material taken from the area to be occupied by the Canal, and constitutes excavation useful for the completed Canal.

By "Plant" Excavation is meant excavation outside of any of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc. It includes material necessary to be excavated for construction purposes only and is chargeable against the particular plant item for which it is performed, such as Prism, Diversions, Locks, etc.

DAM AND LOCK CONSTRUCTION.

MATERIAL.	Atlantic.	Pacific.	Total.
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*
Concrete laid in locks	72,919	62,531	135,450
Concrete laid in dams and spillways	2,510	....	2,510
Fill placed in dams	430,682	113,928	544,610

Record of the Ladder Dredge "Marmot."

The ladder dredge *Marmot* broke its own record of a 25-day month, in January, the output being 186,136 cubic yards of earth, as compared with the December, 1910, record of 183,163 cubic yards, an average output per day, throughout the month, of 7,445.4 cubic yards, as compared with 7,326 cubic yards per day during the month of December. It was working in the channel to the new dock at Balboa.

Ladder dredge outputs are figured on a basis of a 24-hour day, as the watches are changed every 12 hours. Delays in changing watches, breakages, repairs, etc., reduce this to much less than 24 hours actual dredging time. A record of these delays has been kept for the last two months on the *Marmot*, and during the month of December, 1910, the actual dredging time was 21 hours per day, 630 hours in all, and the rate per hour was 349 cubic yards. During January, 1911, the actual dredging time was 22.2 hours per day, 555 hours in all, and the rate per hour was 335.4 cubic yards.

The average hourly outputs of the *Marmot*, actual dredging time, in December and January, were the highest of record in the Canal service.

The work done by the *Marmot* in January is not included in the statement of Canal excavation given above.

Lower Lock Excavation at Miraflores.

Hydraulic operations in the lower, or south lock, at Miraflores have been completed, with the exception of removing the dike of earth, which separates it from the upper lock, and two of the eight monitors are now engaged in washing down this barrier. In the meantime, preparations are under way for finishing the lower lock excavation by steam shovels; one shovel is at work making a cut down the east bank of the lockpit for an incline construction track and another is digging in the pit for a second construction track.

The hydraulic giants and dredge pumps have created an excavation approximating the length and breadth of the lock in size,

NOTES OF PROGRESS.

(*Continued.*)

with a depth of 15 feet below mean tide; all of the material so sluiced and removed having been forced into the hydraulic fill of the west dam. Rock was encountered at the present depth of the pit, and this, together with numerous beds of coarse gravel, mixed with blue clay, which had been heaped up during the progress of sluicing, will constitute the balance of the material to be excavated. Gravel was found in all parts of the lock and the greater part of the finer quantities was carried out by the dredge pumps. Its presence in such an unusual amount was apparently due to streams, which in former times, had their channels in this locality.

As soon as the necessary tracks can be laid, it is proposed to set steam shovels at work excavating for the lower lock side walls, and in carrying out the plans for the concrete work, it is probable that the method employed in building the locks at Pedro Miguel, and of the upper lock at Miraflores, viz., to lay the floor and culvert section before proceeding with the walls, will be reversed, as an expeditionary measure. There is 35 feet of excavation remaining to be removed to reach the floor of the lock, equivalent to a total of about 350,000 cubic yards, and the entire amount will be handled by steam shovels. It is expected that by the time excavation for the side walls is finished, the berm cranes will be ready to begin the concrete construction.

All of the hydraulic giants, with the exception of the two noted above, are now at work in the Canal prism, south of the lock; three of the dredge pumps are continuing the fill of the west dam, and the third is wasting its output in the swamp east of the Canal, principally pumping water to keep the pit free. It is believed that, in addition to the soft material, about 30 per cent of the rock in the prism, south of the lower lock, can be excavated hydraulically. The removal of the rock will be effected by first blasting it, and then sluicing the finer pieces to where the dredge pumps can handle it. The remaining large pieces will be removed either by steam shovel, or by ladder dredge. The new ladder dredge *Corozal* now building at Renfrew, Scotland, will be especially fitted for this work.

Gatun Dam Spillway.

Concrete was placed in the spillway of Gatun Dam, during the week ending February 4, as follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
January 30	162	8:00	2
January 31	254	8:00	1
February 1	216	8:00	1
February 2	212	8:00	1
February 3	78	9:30	2
February 4	222	9:00	2
Total	1,144	50:30	1.50
Previously reported	114,618		
Grand total	115,762		

Highest January Record in Central Division.

The excavation in the Central Division for the month of January, 1911, was 1,614,362 cubic yards, of which 1,603,299 cubic yards were in the Canal prism, 8,480 cubic yards on the Obispo Diversion, and 2,583 cubic yards outside of the Canal prism. This is much the largest January record for excavation within the limits of the Central Division since the beginning of work by the United States. This record was made notwithstanding the fact that there was delivered at Gatun from the Culebra Cut the greatest quantity of material for use on the Dam ever delivered in a single month—207,498 cubic yards—the effect of the Gatun haul being to reduce car capacity owing to the long distance (from 23 to 25 miles) which excavated material has to be carried before being dumped.

The next highest records for the month of January are as follows:

	Cubic Yards.
January, 1908	1,396,469
January, 1909	1,539,648
January, 1910	1,499,495

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Over 52 per cent of the concrete for the system of three twin locks at Gatun has been laid, the exact amount in place at the close of work on February 4, being 1,087,493¼ cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending February 4, and of the total follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
January 30	2,292	38:44	6	560	8:40	2	201	3,053
January 31	2,120	36:08	6	528	6:40	2	233¼	2,881¼
February 1	2,218	38:42	6	448	8:40	2	184¾	2,850¾
February 2	2,027	35:55	6	338	8:40	2	195½	2,560½
February 3	2,105	34:42	6	532	8:40	2	205	2,842
February 4	2,108	37:14	6	566	8:40	2	232½	2,906½
*Portable mixers				603½				603½
Total	12,870	221:25	6	3,575½	50:00	2	1,252	17,697½
Previously reported								1,069,795¾
Grand total								1,087,493¼

*The 603½ yards shown for the portable mixers were placed on the following days, and of this amount, 159½ yards were reinforced concrete: January 30th, 93 yards; January 31st, 128½ yards; February 1st, 90½ yards; February 2d, 103 yards; February 3d, 100 yards; February 4th, 88½ yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is over 63 per cent completed, 529,037 cubic yards, out of a total of 837,400, having been placed at the close of work on February 4. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. ½-cubic yard mixer.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete Placed.	Hours worked.	No of mixers.		
	Cu. Yds.			Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds
Jan. 30	1,100	14:00	2	494	12.50	2				9	1,603
Jan. 31	1,200	15:00	2	906	19:83	3				18	2,124
Feb. 1	1,202	14:00	2	768	17:00	3	20	1:00	1		1,990
Feb. 2	1,138	14:00	2	370	10:00	2	26	1:00	1		1,534
Feb. 3	1,300	15:00	2	430	9:33	3					1,730
Feb. 4	1,112	12:00	2	424	15:83	3	6	:50	1	2	1,544
Total	7,052	84:00	2	3,392	84:49	2.67	52	2:50	1	29	10,525
Previously reported										4,125	518,512
Grand total										4,154	529,037

MIRAFLORES LOCKS.

About nine per cent of the concrete for the system of locks at Miraflores was in place on February 4, the total amount on that date being 118,950 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	AUXILIARY PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. ½-cubic yard mixers.			AUXILIARY PLANT. ¼-cubic yard mixer.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
Jan. 30	480	8:50	2	427	24:75	4	126	9:00	1	20	1,060
Jan. 31	280	5:50	2	465	27:50	4	122	9:00	1	18	894
Feb. 1	372	10:75	2	313	21:00	3	108	8:00	1	12	813
Feb. 2	496	14:00	2	430	23:50	3	102	8:00	1	15	1,052
Feb. 3	500	12:83	2	319	23:00	3	123	7:50	1	33	986
Feb. 4	468	8:50	2	417	24:50	3	119	8:00	1	10	1,023
Total	2,596	60:08	2	2.371	144:25	3.33	700	49:50	1	108	*5,828
Previously reported										2,915	118,950
Grand total										3,023	124,778

*The amount of concrete laid by hand, which is included in the total for each day, was as follows: January 30th, 7 yards; January 31st, 9 yards; February 1st, 8 yards; February 2d, 9 yards; February 3d, 11 yards; February 4th, 9 yards; total, 53 yards.

EXECUTIVE ORDER.

To Create a Land Office for the Canal Zone and for Other Purposes.

By virtue of the authority vested in me, I hereby establish the following Order for the Canal Zone:

Section 1. A Land Office for the Canal Zone is hereby created under the jurisdiction of the Department of Law, and subject to the superior direction of the Chairman and Chief Engineer. The Land Office shall be in charge of an official to be known as Land Agent.

Section 2. The papers, maps, records, and other documents relating to the lands owned or controlled by the United States in the Canal Zone, and the lands auxiliary to the Canal in the Republic of Panama outside of the Canal Zone, when not otherwise provided by law, shall be kept in the Land Office in the care and custody of the Land Agent, under such rules and regulations as the Isthmian Canal Commission may establish from time to time.

Section 3. It shall be the duty of the Land Agent to render assistance to the Head of the Department of Law in all matters relating to the investigation of land claims and land titles; and, under the direction of that officer, he shall have the supervision of Government lands to prevent unauthorized intrusions thereon; and shall perform such other duties as may be assigned to him in accordance with law. He shall have such assistants and other help as may be authorized by the Chairman and Chief Engineer.

Section 4. The Isthmian Canal Commission may adopt rules and regulations for the government of the Land Office in conformity with this Order and not inconsistent with the Executive Order of October 7, 1910, entitled "Executive Order. To prescribe the manner of leasing public lands in the Canal Zone."

Section 5. The Isthmian Canal Commission is hereby authorized to enter into an arrangement with the Panama Railroad Company to consolidate the said company's Land Office with the Land Office hereby created, and by which the papers, maps, records, and other documents affecting the Panama Railroad Company's lands in the Canal Zone and the Republic of Panama may be transferred to the Land Office created by this Order, there to be kept in the custody of the Land Agent for the use and benefit of the railroad company; and the arrangement so made may provide that the work now done by the personnel in the Panama Railroad Company's Land Office, including land surveys and investigation of land claims, may be done by the Government Land Agent and other personnel of the Canal Commission.

The arrangement hereby authorized shall be effected upon such terms, in respect to reimbursement and other compensation from the Panama Railroad Company to the Commission, as may be agreed upon by the Isthmian Canal Commission, and the Panama Railroad Company.

Section 6. This Order shall take effect thirty days from and after this date.

Wm. H. Taft.

The White House,
January 19, 1911.
[No. 1286.]

Repairs to Steel Dump Cars.

Maj. T. C. Dickson, A. L. Robinson, Ad. Faure, and A. E. Bronk have been appointed a committee to consider and recommend the method to be followed by the Mechanical Division in charging the different divisions for repairs to steel dump cars, and, if it is deemed advisable, to include a recommendation in regard to charging for repairs to wooden flat cars.

Accident to Labor Train.

An accident occurred to the Pacific Division labor train about 6.30 a. m., Wednesday, February 1, resulting in fatal injuries to three employes, and more or less serious injuries to 14 others. The dead are: Jorge Ortega, Panamanian, check No. 114161, aged 21, single, who was fireman on the engine hauling the train; Marco Rodriguez, Panamanian, check No. 115259, aged 19, single, laborer: Fitz Phillips, Barbadian, check No. 113925, aged 32, married, laborer. Three American employes, A. Goulstone, conductor of the train, J. A. Burrows, and Eli Sims sustained minor injuries. The accident took place east of and near the south end of the lower lock at Miraflores, where a spur joins a track extending along the east bank of the locks. The switch was turned, so that the train took the spur, instead of continuing on the main track, and collided with a train of sand cars. A number of the employes were riding between the labor cars, and when the impact occurred, some of them fell and received injuries as above mentioned. The damage to rolling equipment was slight.

Pacific Division Sand Deliveries.

The reports of sand shipped from Balboa during the months of December, 1910, and January, 1911, show total deliveries of 42,420, and 41,130 cubic yards, respectively. The distribution in detail for each month is, as follows:

December, 1910.

Destination.	Number of Cars.	Cubic Yards.
Pacific Division	2,776	41,640
Central Division	23	345
Atlantic Division	4	95
Quartermaster's Department	6	150
Panama railroad	4	100
Miscellaneous	4	90
Total	2,817	42,420

January, 1911.

Destination.	No. of Cars.	Cubic Yards.
Pacific Division	2,674	40,110
Atlantic Division	3	75
Central Division	38	580
Quartermaster's Department	1	25
Mechanical Division	5	125
Panama Railroad Company	3	75
Miscellaneous (Private individuals)	6	140
Total	2,730	41,130

Fire at Paraiso Bridge.

The Panama railroad bridge at Paraiso caught fire about 1.30 o'clock on the afternoon of February 7, and several bents in the trestle were burned or damaged. Traffic over the bridge, which was temporarily interrupted, was resumed at noon on February 8.

Missing Men.

Any one having information regarding the whereabouts of John C. Sotherton, who is supposed to be on the Isthmus, will please communicate with the Director of Posts, Ancon, C. Z.

Any one having information regarding the whereabouts of William Patterson, who left the service of the Isthmian Canal Commission on August 10, 1910, is requested to communicate with the office of The Canal Record.

Any one having information regarding the whereabouts of Paul Hoefler, who is supposed to have come to the Isthmus of Panama in May of last year, is requested to communicate with J. H. Hoefler, LaGrange, Ky.

Sailings of Coastwise Ships to New Orleans.

Commencing with the *Cartago*, sailing from Colon on February 9, the United Fruit Company's coastwise steamers calling at Port Limon and Puerto Barrios, en route to New Orleans, will sail from Colon at 4 p. m., instead of 5 p. m., as heretofore.

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the week ending February 4, follows:

Date.	Hours worked.	Cubic Yards.
January 30	8:31	3,531
January 31	7:37	2,837
February 1	6:39	2,674
February 2	7:30	3,012
February 3	6:44	3,012
February 4	7:15	3,514
Total	44:16	18,580

Ancon Crusher.

A statement of rock crushed at Ancon quarry for the week ending January 28, follows:

Date.	Hours worked.	Cubic Yards.
January 23	8:05	2,434
January 24	8:55	3,217
January 25	8:45	3,088
January 26	8:55	2,892
January 27	8:35	2,786
January 28	7:05	2,894
Total	50:20	17,311

Convicted of Embezzlement.

The trial of Bernard L. Kearney, on the charge of embezzling Canal Zone post-office funds, while postmaster at San Pablo, was held in the Circuit Court of the Second Judicial Circuit at Empire, on Tuesday, February 7. He was found guilty and will be sentenced on Tuesday, February 14.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, February 4, 1911. All heights are in feet above mean sea level:

Day and Date	Station.				
	Vigia.	Alhajuala	Gamboa.	Bohio.	Gatun Lake.
Sun. Jan. 29	126.1	92.7	45.5	13.3	13.3
Mon. Jan. 30	126.0	92.6	45.5	13.2	13.2
Tues. Jan. 31	126.0	92.6	45.4	13.2	13.2
Wed. Feb. 1	126.0	92.6	45.4	13.1	13.1
Thurs. Feb. 2	126.0	92.6	45.5	13.1	13.1
Fri. Feb. 3	125.9	92.5	45.4	13.0	13.0
Sat. Feb. 4	125.9	92.5	45.3	13.0	13.0
Height of low water	125.0	92.0	46.0		

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending February 15, 1911 (75th meridian time):

Date.	High.	Low.	High.	Low.
	A. M.	A. M.	A. M.	P. M.
February 9		5.35	11.45	6.10
			P. M.	
February 10	12.12	6.45	1.05	7.20
February 11	1.28	7.53	2.12	8.25
February 12	2.30	8.52	3.10	9.20
February 13	3.28	9.45	4.00	10.10
February 14	4.18	10.30	4.45	11.00
February 15	5.00	11.15	5.27	11.40

RECORD OF CANAL WORK SINCE AMERICAN OCCUPATION.

MONTHLY TOTALS BY CUBIC YARDS OF EXCAVATION AND LOCK AND DAM CONSTRUCTION.

[All figures are of work useful for the completed Canal.]

DRY EXCAVATION.

CENTRAL DIVISION.

MONTHS.	CULEBRA SECTION.*								CHAGRES SECTION.**				
	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
January	....	70,650	120,990	566,750	1,227,022	1,150,249	1,323,693	1,356,394	....	169,447	389,399	175,802	255,385
February	....	75,200	168,410	639,112	1,248,265	1,194,454	1,259,173	....	....	200,145	450,182	286,309	....
March	....	132,840	239,178	815,270	1,290,885	1,434,597	1,509,728	....	....	324,233	619,491	484,846	....
April	....	126,749	213,177	879,527	1,242,574	1,272,746	1,288,845	....	....	329,483	510,020	428,777	....
May	27,556	75,935	196,209	690,365	960,840	1,126,963	1,099,279	....	....	235,902	386,170	248,974	....
June	32,551	76,905	212,623	624,586	1,134,032	1,242,134	1,305,141	....	....	322,145	275,900	164,389	....
July	31,599	78,570	159,789	770,570	1,121,325	1,200,828	1,153,810	....	....	345,757	233,897	166,106	....
August	35,056	49,210	244,823	786,866	1,171,927	1,173,370	1,377,714	....	2,900	368,683	231,543	234,404	....
September	25,220	44,085	291,452	753,468	1,122,860	1,235,978	1,339,948	....	21,546	346,948	235,818	234,290	....
October	19,695	52,940	327,009	834,499	1,160,101	1,302,901	1,320,314	....	25,627	424,911	221,409	271,409	....
November	28,860	60,540	221,642	790,632	1,022,576	1,070,792	1,209,554	....	44,044	336,390	93,619	260,882	....
December	42,935	70,630	307,689	1,025,485	1,210,046	1,152,022	1,211,400	....	98,652	383,948	105,044	197,481	....
Totals	243,472	914,254	2,702,991	9,177,130	13,912,453	14,557,034	15,398,599	1,356,394	192,769	3,787,992	3,752,492	3,153,669	255,385

ATLANTIC DIVISION. PACIFIC DIVISION.

MONTHS.	COLON (MINDI)†		GATUN LOCKS, DAM AND SPILLWAY.††				PEDRO MIGUEL LOCKS.‡				MIRAFLORES LOCKS, DAMS AND SPILLWAY.‡‡			
	1909.	1911.	1908.	1909.	1910.	1911.	1908.	1909.	1910.	1911.	1908.	1909.	1910.	1911.
January	45,664	....	292,155	102,690	125,011	65,889	....	83,726	27,320	15,690	7,203	61,202	31,479	48,744
February	46,046	....	282,797	95,031	123,738	....	....	58,242	9,486	....	39,046	53,689	15,300	....
March	70,713	....	374,598	90,051	132,007	....	....	95,624	6,784	....	73,194	51,417	18,184	....
April	74,368	....	373,456	70,009	103,243	....	....	101,365	9,129	....	98,943	60,060	12,148	....
May	71,407	....	266,747	52,786	82,958	....	....	57,523	10,405	....	73,023	47,588	20,250	....
June	80,101	....	244,951	36,556	88,088	....	13,228	70,971	8,420	....	68,691	55,653	21,994	....
July	82,378	....	213,359	39,058	95,503	....	22,648	77,503	4,410	....	104,369	50,999	11,990	....
August	66,249	....	188,262	40,346	99,737	....	22,217	58,025	12,789	....	94,248	35,446	17,548	....
September	61,437	....	145,990	49,945	103,040	....	28,833	48,825	10,405	....	90,923	31,803	8,590	....
October	72,643	....	154,064	57,321	118,327	....	48,875	39,002	7,433	....	74,700	25,349	9,850	....
November	42,009	....	118,278	63,452	94,552	....	55,401	20,207	10,636	....	52,930	18,644	9,400	....
December	....	....	119,904	96,590	72,030	....	65,578	28,342	11,195	....	69,650	20,083	17,906	....
Totals	713,015	....	2,774,561	793,835	1,238,234	65,889	256,780	739,355	128,412	15,690	846,920	511,933	194,639	48,744

*Total to February 1, 1911, 58,262,327 cubic yards.

**Total to February 1, 1911, 11,142,307 cubic yards, of which 36,604 cubic yards were removed by sluicing.

†Total to February 1, 1911, 1,476,821 cubic yards; in this total are included 172,851 cubic yards removed in 1907, and 590,955 cubic yards removed in 1908.

††Total to February 1, 1911, 6,239,326 cubic yards; in this total are included 26,628 cubic yards excavated October to December, 1906, and 1,340,179 cubic yards in 1907; there were also 38,425 cubic yards removed by dredges at Gatun Dam site in 1907.

‡Total to February 1, 1911, 1,140,237 cubic yards.

‡‡Total to February 1, 1911, 1,602,236 cubic yards; there were also 78,233 cubic yards excavated at Balboa locks and dams in 1907; and 239,891 cubic yards at different points in prism to February 1, 1911.

WET EXCAVATION.

M'THS.	ATLANTIC DIVISION.							PACIFIC DIVISION.								
	ATLANTIC ENTRANCE.§					GATUN LOCKS.		PACIFIC ENTRANCE.§§							Miraflores Locks.§§§	
	1907.	1908.	1909.	1910.	1911.	1908.	1909.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1910.	1911.
Jan	111,100	490,701	521,050	510,055	520,181	....	97,043	....	95,940	94,710	460,250	469,529	518,936	379,810	....	89,243
Feb	110,002	427,722	444,910	493,448	....	....	132,291	....	95,940	93,480	663,519	671,477	285,791	....	....	....
March	84,145	546,886	461,208	412,325	....	....	141,838	....	116,820	92,319	783,281	865,696	462,588	....	....	....
April	69,889	496,366	470,635	190,574	....	....	17,938	....	110,700	104,855	676,539	731,767	534,322	....	....	....
May	133,847	564,386	315,370	447,578	....	....	52,011	....	112,340	122,157	530,466	720,753	484,509	....	....	....
June	124,118	572,749	182,575	458,021	....	....	38,829	50,676	62,697	133,575	656,621	844,685	475,486	....	....	....
July	109,922	625,497	348,451	423,092	....	....	....	41,533	98,400	108,338	696,170	733,181	515,782	....	....	....
August	194,297	638,217	422,846	508,829	....	....	....	54,530	111,930	168,284	737,774	623,263	506,969	....	....	....
Sept	403,842	624,776	410,574	451,873	....	....	....	114,308	105,780	153,975	750,080	662,976	473,585	....	....	....
Oct	415,120	505,260	314,778	549,788	....	....	....	81,836	97,170	357,122	762,276	720,920	467,873	....	40,000	....
Nov	422,797	570,832	457,889	600,708	....	....	....	71,176	92,988	365,423	609,089	627,791	425,370	....	47,444	....
Dec	442,835	679,604	489,121	482,370	....	8,583	....	71,094	90,528	349,551	729,960	727,460	387,034	....	68,681	....
Totals	2,621,914	6,742,996	4,839,407	5,528,661	520,181	8,583	479,950	485,153	1,191,233	2,143,789	8,056,025	8,399,498	5,538,745	379,810	156,125	89,243

§Total to February 1, 1911, 21,680,624 cubic yards; in this total are included 399,820 cubic yards excavated in 1905, and 1,027,645 cubic yards in 1906.

§§Total to February 1, 1911, 26,194,253 cubic yards; there were also 172 cubic yards removed by steam shovels during October, 1908.

§§§Total to February 1, 1911, 555,015 cubic yards.

CONCRETE IN LOCKS AND DAMS.

MONTHS.	GATUN LOCKS.			PEDRO MIGUEL LOCKS.			MIRAFLORES LOCKS.		
	1909.	1910.	1911.	1909.	1910.	1911.	1909.	1910.	1911.
Jan	......	54,136	72,919	......	16,273	38,513	......	......	24,018
Feb	......	55,696	......	......	13,218	......	......	146	......
March	......	60,998	......	......	18,793	......	......	314	......
April	......	63,227	......	......	24,522	......	......	13	......
May	......	74,273	......	......	29,576	......	......	27	......
June	......	89,401	......	......	30,631	......	......	1,603	......
July	......	84,001	......	......	41,464	......	28	3 672	......
Aug	1,298	85,686	......	......	51,264	......	74	6,030	......
Sept	12,294	76,720	......	2,370	50,702	......	......	18,133	......
Oct	29,378	86,949	......	8,310	61,422	......	......	22,159	......
Nov	30,270	75,152	......	10,169	64,248	......	......	23,871	......
Dec	42,832	80,212	......	13,007	42,834	......	......	21,533	......
Total	116,072	886,451	72,919	33,856	444,947	38,513	102	97,501	24,018

From March 17, 1909, to February 1, 1911, there were placed in the Spillway of Gatun Dam 116,379 cubic yards of concrete, including 2,510 cubic yards placed in January, 1911; in Miraflores Dam there were placed 321 cubic yards up to February 1, 1911.

FILL PLACED IN DAMS.

M'THS.	GATUN.*				PEDRO MIGUEL.†		MIRAFLORES.‡			
	1910.		1911.		1910.	1911.	1910.		1911.	
	Wet.	Dry.	Wet.	Dry.	Dry.	Dry.	Wet.	Dry.	Wet.	Dry.
Jan	178,254	236,994	211,992	218,690	......	......	......	28,151	89,243	24,685
Feb	292,215	271,788	......	......	11,510	......	......	1,438	......	......
Mar	210,387	332,661	......	......	22,860	......	......	5,385	......	......
April	242,440	263,437	......	......	31,394	......	......	......	......	......
May	249,283	194 868	......	......	23,572	......	......	6,480	......	......
June	384,166	258,653	......	......	1,350	......	......	7,356	......	......
July	462,092	180,111	......	......	......	......	......	4,290	......	......
Aug	406,606	229,774	......	......	......	......	......	10,898	......	......
Sept	457,637	223,102	......	......	......	......	......	11,220	......	......
Oct	480,732	259,619	......	......	......	......	40,000	14,370	......	......
Nov	129,666	266,105	......	......	......	......	47,444	8,960	......	......
Dec	243,121	169,575	......	......	......	......	68,681	39,224	......	......
T'tal	3,736,599	2,886,687	211,992	218,690	90,686	......	156,125	137,772	89,243	24,685

*Dry fill begun in January, 1907, and 2,096,477 cubic yards of wet, and 3,241,418 cubic yards of dry fill were placed in 1907, 1908 and 1909.

†170,166 cubic yards placed in dams up to December, 1909, inclusive.

‡138,587 cubic yards of wet fill and 472,091 cubic yards of dry fill were placed in dams up to December, 1909.

CANAL EXCAVATION TO DATE.

By French Companies		78,146,960
French excavation useful to present Canal		29,908,000
By Americans—		
Dry excavation	80,144,946	
Dredges	48,993,454	
Total		129,138,400
May 4 to December 31, 1904	243,472	
January 1 to December 31, 1905	1,799,227	
January 1 to December 31, 1906	4,948,497	
January 1 to December 31, 1907	15,765,290	
January 1 to December 31, 1908	37,116,735	
January 1 to December 31, 1909	35,096,166	
January 1 to December 31, 1910	31,437,677	
January 2 to January 31, 1911	2,731,336	

TOTALS BY DIVISIONS AND AMOUNT TO BE EXCAVATED.

DIVISIONS.	Amount excavated.		Remaining to be Excavated.	
Atlantic—				
Dry excavation	7,716,147	29,923,729	556,907	13,433,616
Dredges	22,207,582		12,876,709	
Central—				
Culebra Cut	58,262,327	69,404,634	25,924,397	27,720,384
All other points	11,142,307		1,795,987	
Pacific—				
Dry excavation	3,060,769	29,810,037	3,319,373	12,245,366
Dredges	26,749,268		8,925,993	
Grand totals		129,138,400		53,399,366

PERMANENT CANAL BRIDGE.

Board Recommends a Structure of the Arch Type Over the Cut at Empire.

The board consisting of Lieut.-Col. H. F. Hodges chairman; Lieut.-Col. D. D. Gaillard, Mr. H. H. Rousseau, Mr. J. A. Smith, and Lieut. Frederick Mears, members, appointed to consider and report on the matter of a permanent combined railway and highway bridge over the Canal, has made its report and recommendation. The board was unanimous in the opinion that a bridge, which shall not interfere with navigation, is necessary and desirable, and should be built, providing the cost does not exceed a reasonable amount; and that only the high, fixed type of bridge should be considered, with a clearance sufficient to accommodate the largest steam vessels in existence, and the largest sailing vessels with lowered top masts. While the board had no complete data before it regarding the height of vessels, it had, however, information that a height of 135 feet at high tide is considered sufficient for the bridges in New York Harbor, this height diminishing to about 118 feet at the shores of the river. The height of the largest steam vessels afloat, viz., the *Olympic* and *Titanic*, measured from the keel to the top of the smokestack is 175 feet. The least draft will be about 25 feet, so that the height of 150 feet would accommodate all the necessarily fixed parts of these vessels. For the purpose of estimate and recommendation, the board assumed as necessary, a clear height of 175 feet above a lake level of 87 feet.

The most suitable location for a bridge of the high, fixed type was regarded by the board to be in the neighborhood of the existing suspension bridge at Empire. Here, connection can be obtained with the relocated line of the Panama railroad; the old line of the Panama railroad on the west side of the Cut; and also, with the projected line to David, if the last named be built in the location that has been surveyed for it. A suitable foundation can be found, and, it is believed, owing to the character of the rock, which will stand at a steep slope, a minimum length of span can be secured. The location favored is a crossing either just north, or south, of the present temporary suspension bridge, and at right angles to the axis of the Canal.

To assist the board in its consideration of the type of bridge to be recommended, two designs were prepared, one for a cantilever truss, and the other for a plate girder arch structure, which should have sufficient length to span the entire width of the Canal with the desired clearance, and with sufficient margin on each side of the edge of the Cut to insure the safety of the abutments; the approaches to be on embankments, with one or more spans next to the abutment, in order to avoid bringing the fill too close to the edge of the Cut. The designs provided a superstructure which should carry a railroad about 16 feet wide, a roadway of about the same width, and one or more footwalks, each about six feet wide, the bridge to be constructed to carry standard railway and highway loads.

The members of the board recorded themselves in favor of the plate girder arch structure. It was believed that while this may be found more difficult to erect than the cantilever, there is less exposed metal requiring preservation, and it will be stiffer and more satisfactory after completion.

In conclusion, the report stated that final selection of design, or definite decision as to details should not be made until after careful estimates have been worked out along the different lines that have been proposed, or that may hereafter suggest themselves, but recommends that a bridge of the arch type be constructed.

Safety Measures for Labor Trains.

Owing to the practice of jumping on and off labor trains when they are in motion, and the menace to life and limb caused by employes riding on the roofs and platforms of cars, together with the fact that these trains have been used to a considerable extent by nonemployes, the transportation committee has recommended that sign boards be placed on all labor trains, with the following warning printed both in English and Spanish: "For employes only. Passengers must remain inside of cars and not get on or off train while it is in motion. Offenders will be prosecuted." The Counsel of the Commission has been requested to draft an executive order prohibiting unauthorized persons from jumping on and off moving trains, as the Canal Zone laws do not contain such a provision. In addition to these precautions, an extra car has been authorized placed on labor trains, where crowded conditions exist.

Additional School Facilities.

A building of American construction, near Rio Grande, formerly used by the Central Division as a timekeeping office, has been transferred to Pedro Miguel, and is being reerected there as a schoolhouse for colored children. No provision has hitherto been made toward educating colored children in that settlement, and it is estimated that there are now about 50 children of school age.

The erection of a schoolbuilding at Bas Obispo, and its transfer up the Chagres River, by raft, to Cruces, has been successfully accomplished, and the building is now occupied. It stands near the church, and both buildings will be above the high water level when Gatun Lake is filled, although a portion of the town will be inundated.

Civil Service Examinations.

Examinations will be held, probably on March 5, for the positions of stenographer and typewriter and of typewriter in the Isthmian Canal Service. Examination for clerk in the Isthmian Canal Service will be held probably on March 12. The next examinations to be held for stenographer and for typewriter will be about April 30, and for clerk in October next.

Request should be made at once for application form and a copy of the Manual of Examinations, stating in each case the examination it is desired to take. Applications for examination on March 5 will be received only up to March 1, and for the clerk examination only up to March 7.

The following named examinations may be held in the near future, and information in regard thereto may be obtained from the Manual of Examinations, a copy of which may be had on request; application therefor must be filed in this office not later than February 25: Assistant bookkeeper, civil engineer, and teacher (male), in the Philippine Service; civil engineer and superintendent of construction, in the Quartermaster's Department at large; engineer, and teacher, in the Indian Service; civil engineer and draftsman,

All instructions found in application form, and in the Manual of Examinations concerning an examination applied for, should be read very carefully, to avoid unnecessary returning of application for correction, which in some cases delays certification. In connection with information required to be furnished in applications in regard to legal residence of applicants, it is to be noted that legal residence does not require continuous bodily presence, but refers to the place at which the applicant, if a voter, is legally entitled to exercise the right of suffrage.

JOHN K. BAXTER,
Secretary, Isthmian Civil Service Board.
Culebra, C. Z., February 6, 1911.

The Fill of Gatun Dam.

Suction dredge *No. 83* has been towed around from the Mindi cut, up the Chagres River, to the west section of Gatun Dam, and is pumping into the dam from the north side. There are now three dredges on the fill of the west section, one on the north side and two on the south side, and in January, they pumped 211,992 cubic yards into the dam, making the total amount of the hydraulic fill in place at the end of the month 3,948,591 cubic yards. The east section of the dam is being allowed to drain out during the dry season.

District Nursing in Colon.

The Sanitary Department has detailed two nurses from the Colon Hospital staff to the duty of district nursing in the poor sections of the city of Colon. The attention of the department had been directed to the high rate of infant mortality in that city, and investigation showed that it was due mainly to ignorance on the part of the mothers in caring for them. For convenience of administration, the city has been divided into two districts, and each nurse makes daily visits to the homes in her district where there are mothers with infants and young children, giving instructions in feeding, and preparing food for the babies, bathing and dressing them, and in the care of the sick. The department has issued a little book in Spanish and English for distribution in the city, containing simple rules for the care of infants and children. The churches, church societies, and other organizations in Colon, are asked to cooperate in this work and, although it has been established only since January 15, good results have already been obtained. The work is under the direct supervision of the health department in Colon.

Tennis Tournament.

A tennis tournament will be held at the new Tivoli courts, the Panama club courts, and the concrete court at Ancon Hospital, five courts in all, on Sunday, February 19, and Wednesday, February 22 This tournament is open to all players on the Isthmus. Singles and doubles will be played. No admission fee will be charged, but each entrant is requested to bring two tennis balls. Those entering in singles cannot enter in doubles. All entries must be sent to B. C. Poole, Ancon, C. Z., not later than February 15. Play will begin at 9 a. m., and entrants will be notified to which courts they are assigned.

FEDERATED WOMEN'S CLUBS.

The Mid-Year Meeting at the Hotel Tivoli.

The January meeting of the Canal Zone Federation of Women's Clubs was held at the Hotel Tivoli on Tuesday, January 31. The morning session convened in the sun parlor at nine o'clock, there being about 50 representatives of the federated clubs in the Canal Zone present. Mrs. Thomas E. Brown, jr., presided, and the guest of honor was Miss Helen Varick Boswell of New York. The business meeting consisted of the quarterly reports of the officers and chairmen; of standing and special committees, and discussions of club work and progress.

The special activities of recent months have been along civic, educational, and philanthropic lines. In her report, the chairman of the health committee gave an outline of the general plan for a tuberculosis campaign that is being carried on in Cristobal and among the poorer districts of Colon. The education committee will work toward the establishing of vacation schools for American children; the art and literature committee outlined some practical programs and urged the clubs to make literary programs a feature of their regular meetings. The library committee reported the addition of books to local libraries and general progress in the library work of the clubs.

A resolution thanking the General Superintendent of the Panama railroad for granting transportation to the clubwomen, to the speakers and those who took part in the program, and to the entertaining and decorating clubs, was passed.

The afternoon meeting was held in the ball room of the hotel, when there were present 200 clubwomen and their guests. The address of welcome was delivered by Mr. Maurice H. Thatcher; Miss Boswell spoke on the social and political progress of women in the United States, and Mrs. John Morrow Adams, representing the Maryland State Federation, brought greetings from that organization to the Zone clubs. The musical program consisted of a piano solo by Mrs. Alfred G. Farmer, a group of songs by Mrs. A. O. Ludwig, accompanied by Mrs. Mary G. Shivers, and the singing of "America" by the audience.

The program was followed by an informal reception, after which tea was served in the dining room, the Paraiso Woman's Club entertaining. The Pedro Miguel Woman's Club was in charge of the decorations and house arrangements. One end of the ball room was hung with the American flags, the flags and pennants of the federated clubs, and the green and gold banner of the Canal Zone Federation. On the officers' table were cut flowers.

The cook book and the federation year book were on sale during the day, and literature, issued by the public health and hygiene committee of the American Medical Association, was distributed.

The annual meeting of the Federation will be held in October, probably at Gatun.

The Cristobal Woman's Club held a meeting in the clubhouse on Wednesday afternoon, February 1, to which the women of Cristobal and Colon were invited. Miss Boswell made an address on welfare work in the United States as it concerns the condition of women and children in industries.

On Thursday afternoon, February 2, the Gatun Woman's Club held a reception in honor of Miss Russell, who made an address, and the president of the Canal Zone Federation. Miss Maria Elise Johnson played a violin solo, and Miss Blanche Neville sang. Refreshments were served. There was an attendance of about 30.

Miscellaneous Social Events.

A valentine "social" will be held in Ancon Hall for the benefit of the Methodist Episcopal Church, Panama, on Monday evening, February 13. There will be music, and refreshments, consisting of home made pies, cakes and candies, will be on sale.

The Corozal Dancing Club will hold a dance at the Y. M. C. A. hall on Friday evening, February 10.

The Cristobal Dancing Club will hold their regular monthly dance on Saturday evening, February 11.

The Cristobal Catholic Club will hold a dancing party in the Cristobal clubhouse on the evening of Washington's Birthday, Wednesday, February 22.

Annual Red Cross Ball.

The Canal Zone Chapter of the American National Red Cross will give an annual ball at the Hotel Tivoli, Saturday evening, February 18. Tickets have been placed on sale and these include transportation and admittance to the hall. Tickets will be sold to those who have already remitted their Red Cross dues for this year at 50 cents each; to those who have not remitted their dues, at $1.50 each, which will include transportation, attendance at the ball, and membership for the coming year.

This ball will be given annually hereafter, for the purpose of affording an opportunity for a general reunion once a year of this organization; also, to afford a convenient opportunity for renewal of annual dues.

Red Cross Finances.

A statement of the financial condition of the Canal Zone Chapter, American National Red Cross, follows:

RECEIPTS.

January 1. Balance on hand	$1,698.32	
January 1. Refund of money advanced to exemploye of Panama railroad, May, 12, 1910	100.00	
January 1 to 31. Membership dues	67.00	
		$1,865.32

DISBURSEMENTS.

January 1. Coach hire to bank and return	.20	
January 11. Printing receipt cards	2.60	
January 12. Coach hire to bank and return	.20	
January 18. Relief of family at Cristobal, (deported)	50.00	
January 21. Printing envelopes	5.08	
January 16. Postage	3.00	
Total disbursements		$61.08
January 31. Balance on hand		$1,804.24

JOHN L. PHILLIPS, *Treasurer.*

Approved: C. A. DEVOL, *Chairman.*

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Hotel Tivoli, Ancon, C. Z., on Sunday, February 12, 1911, at 7.30 p. m. The program follows:

1	March—*I. C. C. Band*	Santos Jorge A.
2	Selection—*The Golden Girl*	Howard
3	Intermezzo—*Bridal Song from the Rural Wedding.*	Goldmark
4	Overture—*Semiramide*	Rossini
5	Waltz—*Idle Hours*	Wood
6	Serenade—*La Paloma*	Xradier
7	Medley Selection—*The Sunny South*	Lampe
8	Song—*The Rosary*	Nevin
9	March—*With Sword and Lance*	Starke

CHAS E. JENNINGS, *Musical Director.*

BASEBALL.

PANAMA CANAL LEAGUE.

RESULTS OF GAMES, FEBRUARY 5.

At Ancon—Ancon, 5; Atlantics, 4.
At Empire—Empire, 0: Commissary-Subsistence, 4.
At Colon—Gorgona, 6; Marines, 0.

STANDING OF CLUBS.

	P.	W.	L.	P.C.		P.	W.	L.	P.C.
Com-Sub.	7	7	0	1.000	Gorgona.	7	3	4	.429
Ancon	7	5	2	.714	Atlantics	7	2	5	.286
Empire	7	4	3	.571	Marines.	7	0	7	.000

SCHEDULE FOR FEBRUARY 12.

At Ancon—Atlantics vs. Ancon.
At Empire—Marines vs. Gorgona.
At Colon—Commissary-Subsistence vs. Empire.

SUMMARIES OF GAMES, FEBRUARY 5.

Ancon.	AB.	H.	PO.	A.	E.
RDren'n,cf.	3	1	0	0	0
L.Dren'n,rf	5	3	1	1	0
Tinsley,lf.	5	1	0	0	0
Smith,2b.	5	0	2	1	1
Potter,3b.	5	2	0	3	0
Caldwell,c.	3	1	8	2	0
James,ss.	4	0	1	0	1
Nygren,1b.	4	2	15	1	0
Murray,p.	2	0	0	4	0
Hull, p.	2	0	0	2	0
Totals	38	10	27	14	2

Atlantics.	AB.	H.	PO.	A.	E.
Hennessy,ss.	4	2	1	3	3
Gamble,1b.	3	1	4	0	2
Edwards,2b.	4	2	1	1	1
Osborne,rf.	3	0	1	0	0
Yingling,c.	4	0	9	0	1
Pearman,3b	4	1	3	1	1
Sullivan,cf.	4	0	1	0	0
Herring,lf.	4	0	5	0	0
Davis, p.	3	1	1	2	0
Totals	33	7	*26	7	8

Ancon	1	0	0	2	0	0	0	0	2—5
Atlantics	0	0	3	0	0	1	0	0	0—4

*Two out when winning run was made.

Runs—Ancon: R. Drennan, L. Drennan, Potter, James, Nygren; Atlantics: Hennessy, Gamble, Edwards, Davis. Runs earned—Atlantics, 3; Ancon, 2. Two base hits—Potter, Edwards (2). Three base hit—Potter. Sacrifice hits—Caldwell, Gamble, Osborne. Stolen bases—R. Drennan, L. Drennan, Potter, Nygren, Pearman. Bases on balls—Off Davis, 1. Struck out—By Davis, 7; by Murray, 3; by Hull, 3. Hit by pitcher—by Davis, R. Drennan. Left on bases—Atlantics, 3; Ancon, 10. Umpire—Lawler. Time of game—2.20. Scorer—J. K. Munroe. Attendance—300.

C.-S.	AB.	H.	PO.	A.	E.
Sullivan,lf.	5	0	1	0	0
Breiv'gle,2b	4	1	5	1	0
Curtis,3b.	3	2	0	2	0
Mosher,ss.	2	0	0	1	0
Meegan,c.	4	1	7	2	0
Guptil,1b.	4	2	10	3	0
Buchan'n,cf	3	1	1	0	0
Hodnett,rf.	3	0	3	0	0
Kellogg,p.	3	1	0	2	0
Totals	31	8	27	11	0

Empire.	AB.	H.	PO.	A.	E.
Bryan,3b.	4	0	1	1	0
Moore,c.	3	0	9	0	0
Markley,ss.	3	0	2	3	0
Bell,1b.	2	0	9	1	1
Dough'ty,2b	3	0	2	3	0
Toone,rf.	2	0	1	0	0
VanZandt,lf	2	0	0	0	0
Fluharty,lf.	1	0	0	0	0
Murphy,cf.	2	0	3	0	0
Junger,p.	3	0	0	3	0
Totals	25	0	27	11	1

Com.-Subsistence	0	2	0	0	0	1	0	0	1—4
Empire	0	0	0	0	0	0	0	0	0—0

Runs—C.-S.: Curtis, Meegan, Guptil (2). Runs earned—C.-S., 3. Two base hits—Curtis, Guptil. Home run—Curtis. Sacrifice hits—Curtis, Mosher, Kellogg, Bell. Sacrifice fly—Hodnett. Stolen base—Markley. Bases on balls—Off Kellogg, 2; off Junger, 2. Struck out—By Kellogg, 7; by Junger, 9. Hit by pitcher—by Kellogg; Murphy, Moore. Left on bases—C.-S., 6; Empire, 3. Double play—Markley to Dougherty to Bell. Umpire—Irwin. Time of game—2,20. Scorer—Moeller. Attendance—1,137.

Gorgona	AB.	H.	PO.	A.	E.
Clements,ss	5	2	3	1	0
Barney,2b.	5	0	1	2	2
Herring,c.	4	0	10	2	1
Wright,1b.	4	4	9	1	0
Tretter,p.	3	0	2	3	0
Emery,lf.	4	1	0	0	0
Fullerton,cf	4	0	1	0	0
Briggs,3b.	4	2	1	3	0
Masson,rf.	4	0	0	0	0
Totals	37	9	27	12	3

Marines.	AB.	H.	PO.	A.	E.
Guskie,ss.	4	0	0	7	3
Silke,lf.	4	1	0	1	0
Maguire,1b.	2	0	9	1	1
McKelvey,cf	3	0	0	0	0
Fields,3b.	3	0	4	1	2
Shepard,2b.	3	0	1	2	0
Richards,c.	3	0	10	4	3
Austin,rf.	2	0	0	1	0
Munsen,p.	3	0	2	3	0
Ryan,rf,3b.	1	1	0	0	0
Kenyon,rf.	0	0	1	0	0
Totals	28	2	27	20	9

Gorgona	0	1	0	0	0	0	0	2	3—6
Marines	0	0	0	0	0	0	0	0	0—0

Masson ran for Wright in 3d inning.

Barney ran for Wright in 8th inning.

Runs—Gorgona: Clements, Barney, Herring (2), Tretter, Emery. Runs earned—Gorgona, 2. Two base hits—Clements, Wright (2). Three base hit—Clements. Stolen bases—Barney, Herring (3), Emery (2), Briggs, Masson. Bases on balls—Off Tretter, 2; off Munsen, 5. Struck out—By Tretter, 10; by Munsen, 11. Left on bases—Gorgona, 9; Marines, 3. First base on errors—Gorgona, 5; Marines, 1. Umpire—Freel. Time of game—2.20. Scorer—J. P. Mead. Attendance—55.

The Corozal baseball team defeated a team representing Paraiso, at Corozal, on February 5. Score 23 to 2.

The following vessels arrived at and departed from the port of Balboa during the week ending February 4, 1911:

Arrivals—January 29, *Barracouta*, from Central American ports; *Rupanco*, from intermediate ports; January 31, *Princeton*, from Amapala; *Oberon*, from Port Harford; February 2, *Loa*, from Valparaiso; February 3, *City of Panama*, from San Francisco.

Departures—January 30, *Riverside* and *San Juan*, to San Francisco; *Chile*, to Callao; February 2, *Stanley Dollar*, to San Francisco; *Arica*, to Guayquil; *Oberon*, to Port Harford; February 3, *Princeton*, to Salina Cruz.

OFFICIAL CIRCULARS.

Standardization of Stationery.

CULEBRA, C. Z., January 31, 1911.

CIRCULAR No. 366:

The stationery for use of the Isthmian Canal Commission and of the Panama Railroad Company shall be standardized as follows:

Sizes for general forms—The following shall be standard sizes for general forms, with special sizes permitted if necessity requires:

8 x 3½—One-third letter size.
8 x 5¼—One-half letter size.
8 x 7—Two-thirds letter size.
8 x 10½—Letter size.
8 x 14—One and one-third letter size.

The above sizes shall be strictly adhered to, except in such cases as come under "Special size forms."

Special size forms—Special size forms, which, for various reasons, cannot be made to conform to the standard, shall be arranged for between the requisitioning official and the Depot Quartermaster. However, this is not intended to mean sizes varying one-eighth, one-quarter, or one-half inch from standard, unless to be used in card cabinets.

Stock for general forms—The following weights in white paper shall be standard for general forms. For comparative purposes only the weight in each instance refers to a ream of 17 x 22 stock. The Quartermaster's Department will purchase stock in sizes which will cut and print to the best advantage the standard sizes given above, but same will equal the weight mentioned in 17 x 22:

32 lb—Extra heavy. Same as present "Daily leave order."
24 lb—Heavy. Will make about one good carbon copy.
20 lb—Same as that on which this circular was printed.
16 lb—For forms requiring three to four carbon copies.
13 lb—For forms requiring five to seven carbon copies.
7½ to 8 lb—Unglazed tissue.
7½ to 8 lb—Glazed tissue.

The Depot Quartermaster will keep in stock the best grade and a medium grade in all the above weights, except the first and last.

Colored papers—The standard colored papers to be kept in stock by the Depot Quartermaster shall be blue, pink and buff in the 20-pound and 16-pound weights. Other colors and weights will be considered special.

Stock forms—All stock forms (those used in common by two or more departments or divisions) shall be approved, ordered and given a C. E. number by this office, and before any such form is reprinted copy of same shall be submitted to this office for any necessary revision.

Forms in use by two or more departments or divisions carrying but slightly different matter shall be made into stock forms, if possible, the matter to be taken up by the Depot Quartermaster with the requisitioning officials with this end in view, whenever he finds such forms are being ordered.

Letter heads—A stock letter head (Form 292-a C. E. for ordinary weight, Form 292-b C. E. for medium weight, and Form 292-c C. E. for glazed tissue) printed on 8 x 10½ stock in black ink, shall be used by all departments and divisions of the Isthmian Canal Commission.

Those for the Panama Railroad Company shall be printed on 8 x 10½ stock in black ink.

Second sheets—The quality and weight of paper for second sheets (used for carbon copies, etc.) shall be left to the requisitioning official, to be chosen from the standard stock.

Reference slips—Reference slips, if used in lieu of letters of transmittal, shall conform to the standard sizes—half-letter size, two-thirds letter size, or, preferably, letter size.

Telegraph blanks—A stock telegraph blank (Form 202 C. E.) sball be used by all departments and divisions of the Isthmian Canal Commission.

Colored inks—Copying and colored inks shall be used only when absolutely necessary.

Information to be given on requisitions—Requisitioning officials should state whether a form is to be used with pencil, typewriter or pen, and the number of copies it is desired to make at one time, in order that suitable stock may be selected for same.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission,
President, Panama Railroad Company.

Lights in Commission Quarters.

CULEBRA, C. Z., February 3, 1911.

HEADS OF DEPARTMENTS AND DIVISIONS:

My attention has been invited to a number of unauthorized installations, by employes, of electric lights and other electrical material. The lighting of quarters of the Commission by electricity is under the Quartermaster's Department, and no changes or alterations in, or additions to, electric lighting apparatus in Commission quarters are allowed, except such as are authorized by the Quartermaster's Department in accordance with existing regulations; and all such changes, alterations and additions, as well as original installations, shall be made by the Mechanical Division, upon proper authority, only. It is desired that the attention of employes in all departments and divisions be invited to the above, and also that my attention be called to any unauthorized installations of electrical apparatus in quarters of the Commission.

H. F. HODGES,
Acting Chairman and Chief Engineer.

Oil Allowance for Steam Shovels.

CULEBRA, C. Z., February 2, 1911.

CIRCULAR No. 314-E.

Circular No. 314 is hereby amended as follows: The present allowance of car oil for steam shovel lubrication, amounting to two and one-half gallons per day, is cancelled, and the following substituted therefor:

Car oil—Per working day of eight hours....3 quarts (To be used for lubrication of bearings)

Crude oil—Per working day of eight hours.....2 gallons (To be used for lubrication of steam shovel chains.)

H. H. ROUSSEAU,
Acting Chairman and Chief Engineer.

Cup Grease.

CULEBRA, C. Z., February 1, 1911.

CIRCULAR No. 290-B:

Paragraph 2 of Circular No. 290-a is hereby supplemented by the following:

Cup grease—Narrow gage engines......4 pounds per month.

H. H. ROUSSEAU,
Acting Chairman and Chief Engineer.

Rules for Central Division Lidgerwood Engineers;

EMPIRE C. Z., January 27, 1911.

CENTRAL DIVISION CIRCULAR No. 196.

All Lidgerwood engineers will be governed by the following instructions:

Engineers will report on machines at least 15 minutes before commencing operations in the morning and in the afternoon.

Will keep the machine clean with the help of the silver employes working on same.

Will make thorough daily inspections of machine and a daily report of its condition.

If work reported as necessary is not done, will report same to the Lidgerwood inspector or the traveling engineer.

Will make such repairs on machine as can be done without inconvenience to the work.

Keep oil holes clean and oil wells free from dirt.

Promptly remove all condensation from steam pipes and cylinders before operating the machine, and when not operating, keep drains and cylinder cocks open.

Remove oil taps located on each valve and insert small quantity of graphite and valve oil mixed, before commencing operations, both in the morning and afternoon. If lubricator fails to work at any time, oil taps should be removed and oil applied until such time as the lubricator can be worked effectively.

Oil taps to be removed and oil admitted at any time that valves are found to be operating dry, the lubricator to be thoroughly blown out before each filling.

In cases of doubt as to the proper manner of operation, care of machine, or special instruction, the presence of the Lidgerwood inspector or traveling engineer must be requested.

D. D. GAILLARD, *Division Engineer.*

Refunds at the Commissaries.

CRISTOBAL, C. Z., February 1, 1911.

CIRCULAR No. 266:

Purchasers from the Commissary Department frequently complain that they do not receive copies of refund notes covering such articles as are out of stock, etc.

The failure to receive refund notes is usually due to the failure of the purchaser to look inside the small tag envelope attached to each package. It is urged that these envelopes be always carefully examined on the inside for refund notes.

JOHN BURKE, *Manager*

Approved: EUGENE T. WILSON,
Subsistence Officer.

Rainfall from January 1 to 31, 1911, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	.39	15	.83
Balboa	.28	1	.38
*Miraflores	.23	16	.27
Pedro Miguel	.03	11	.03
Rio Grande	.01	1-12	.02
Central Section—			
Culebra	.01	1-12	.02
*Camacho	.04	24	.04
Empire	.02	23	.02
Gamboa	.06	23	.11
*Juan Mina	.04	12	.04
Alhajuela	.08	24	.14
*El Vigia	.12	24	.20
*Gorgona	.20	1	.43
San Pablo	.27	16	.53
Tabernilla	.04	1	.08
Bohio	.16	11	.32
Trinidad	.15	16	.64
*Monte Lirio	.42	12	.89
Atlantic Section—			
Gatun	.20	24	1.20
*Brazos Brook	.40	24	1.00
Cristobal	.15	†	.99
Porto Bello	.17	27	.84
*Nombre de Dios	.44	27	1.51
*Bocas del Toro	.85	29	3.57

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

†24th and 30th.

January Rainfall for Three Years.

STATION.	1909	1910	1911	Station Average	Years of Record	Rai'y days 1910
Pacific Section–	*Ins.*	*Ins.*	*Ins.*	*Ins.*		
Ancon	2.90	1.22	.83	1.10	13	7
Balboa	1.45	.97	.38	1.21	12	4
Miraflores	4.18	3.58	.27	2.68	3	2
Pedro Miguel	3.08	1.82	.03	1.24	4	1
Rio Grande	3.85	1.65	.02	1.53	7	2
Central Section–						
Culebra	2.96	1.31	.02	1.83	21	2
Camacho	3.29	2.00	.04	1.43	5	1
Empire	2.28	.70	.02	.85	6	1
Gamboa	2.77	1.24	.11	1.91	26	4
Alhajuela	2.72	2.99	.14	1.33	12	4
El Vigia	3.91	.68	.20	1.60	3	3
Gorgona	......	1.60	.43	2.09	7	3
San Pablo	4.09	2.21	.53	1.91	4	7
Tabernilla	4.58	2.26	.08	1.96	4	3
Bobio	7.29	4.02	.32	6.00	16	10
Trinidad	7.58	4.28	.64	3.80	4	13
Monte Lirio	7.94	4.29	.89	3.98	4	19
Atlantic Section–						
Gatun	7.17	4.81	1.20	4.24	7	17
Brazos Brook	9.10	4.03	1.00	4.10	5	12
Cristobal	10.61	2.94	.99	4.05	41	12
Porto Bello	20.90	14.05	.84	9.64	4	15
Nombrede D	15.26	9.57	1.51	9.79	3	15

The average rainfall over the Isthmus for the month of January was the least monthly rainfall of record since the American occupation of the Canal Zone.

FOUND—One watch, which owner can have by identifying. Call at house No. 129, room No. 15, W. H. Jones, Gorgona, C. Z.

WEATHER CONDITIONS, CANAL ZONE, JANUARY, 1911.

STATIONS.	Press're (reduc'd to mean of 24 hours.)	Temperature.					Mean relative humidity.	Precipitation.			Wind.				
		Mean.	Maximum.	Date.	Minimum.	Date.		Total inches.	Station average.	Number of rainy days.	Total movement (in miles.)	Prevailing direction.	Max. velocity (in miles.)	Direction.	Date.
Cristobal	29.887	78.3	82	1	71	16	80	.99	4.05	12	10,518	N.E.	30	N.	12
Culebra	29.869	77.8	89	15	66	8	85	.02	1.83	2	7,395	N.W.	28	N.	12
Ancon	29.858	79.8	91	4	66	8	82	.83	1.10	7	6,457	N.W.	22	N.	9

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

Wm. Dubois met all comers in simultaneous chess on Tuesday evening, January 31, playing J. F. Warner, F. E. Sterns, E. A. Putnam, E. C. Bartlett, A. B. Goodenow. Mr. Dubois won three games and lost two.

High scores in bowling for the week ending February 4 were made, as follows: Bigpins—Mengle, 203; Case, 211; Huttlemeier, 217, 213; Hall, 211. Duckpins—Lindsay, 111; McIlvaine, 100; Palmer, 101. The two-man bowling tournament opened on Thursday evening, February 2. Nine teams have entered.

A "smoker" will be given for the men of Culebra on Friday evening, February 17. All the men of Culebra are cordially invited.

The monthly "social" will be omitted for February, because of the large number of other events scheduled. Arrangements are being made for a special program for the "social" on March 24.

EMPIRE.

On February 5, members of the camera club went to Pedro Miguel for the purpose of taking pictures. As soon as the exhibition board is completed, the pictures will be exhibited week by week.

On Tuesday evening, January 31, the Examination of Accounts team took three bowling games from the Central Division in the local league, and on Thursday, the machine shop took two out of three games from Civil Administration. The following scores were made:

Central Division.				Examination of Accounts			
Hobbs	126	170	145	Drake	178	156	168
Koperski	136	163	153	V-Brooklyn	127	188	155
Booth	170	146	172	Johnson	201	147	146
Cohen	157	148	156	Bardelson	192	189	210
Potter	199	156	202	Pearson	178	155	152
Total	788	783	828	Total	876	835	831
Civil Administration.				Machine Shop.			
Davis	172	136	146	Gustavson	151	146	137
Pinney	152	144	136	Fretz	146	122	137
Jones	145	139	127	Anderson	141	136	
Giavelli	133	148	161	Snyder	171	152	143
Goolsby	182	163	155	Edwards	165	189	188
				Nelson			161
Total	784	730	725	Total	774	745	766

Outside of tournament games, the high score rolled during the week in bigpins, was 212, by Reiman. In duckpins, Henry made 104, Giavelli, 101, and Scull, 102, 104, and 103.

Five members were added to the gymnasium class last week. Members who join at this time get the benefit of a full term's work.

On account of the absence of Mr. Wagg, the literary society discussion on February 3, was led by Mr. Brown, who took "Character building" as his subject.

The ladies' club will give an entertainment in the hall on February 14.

There will be a moving picture entertainment on Saturday, February 11.

Two new members were added to the Sunday morning Bible class last week. The class is taught by Mr. Nellis.

The ladies of the Empire Christian League will hold a sale of home baked foods at the clubhouse on Saturday, February 11, from 2 to 5 p. m.

GORGONA.

The following scores were made in a match game of duckpins between the car department and the machinists on Friday night, February 3: Machinists—405, 384, 375. Car Department—439, 434, 390.

The following 100, or over, scores were rolled in duckpins during the week ending Saturday, February 4: Davis, 100; R. Varenkamp, 109; Montgomery, 107, 101, 107; Otis, 114. The following 200, or over, scores were rolled in bigpins: Stewart, 212; Tretter, 216; Gailliot, 221, 223; H. McConaughey, 214, 210, 206; Bordt, 205; M. Varenkamp, 223; Stoehr, 207.

The discussion club on Wednesday, February 1, was led by A. A. Nellis of Empire, topic, "Does the church keep pace with modern industrial progress?"

The "Life problem" study club was led by Melville Booz at the meeting on Friday night, Febraury 3. All men are invited to these meetings which are held every Friday night.

J. Selenkow will give an old-fashioned Punch and Judy show in the clubhouse on February 14.

GATUN.

The Gatun Carnival Association was organized on Thursday, February 2, with the following officers President, Frank Gardner Smith; vice-president, A. O. Ludwig; secretary-treasurer, F. J. Severy. The object of the association is to hold a carnival at the clubhouse in the first part of March. The various subcommittees will be announced at the next meeting.

C. O. Purdy was elected leader of the "Life problem" club which was organized on Wednesday evening, Febuary 1. General Secretary Freeman was present and addressed the meeting. The club decided to hold its discussions every Sunday in the game room at 6.15 p. m. The officers of the club are: President, H. T. Critchlow; vice-president, E. C. Ryle; secretary, Frank J. Severy. Sixteen men were present on February 5, when the "Value and choice of a life work" was discussed.

The indoor baseball season opened on Monday, February 6, when a large number of men appeared on the gymnasium floor for practice. A team will be selected in the near future for the coming interassociation tournament.

On Wednesday evening, February 8, a society for literary work will be organized at the clubhouse. The purpose of the society is to train men along the lines of public debate, recitation, quotation, and parliamentary rules. The various political and social questions of the day will be debated and discussed. These meetings will be held in the gymnasium.

A chess and checker club will be organized on Saturday evening, February 11. Members interested in these games are invited to be present.

For the benefit of those who desire to continue the study of Spanish, Mr. Kiernan will hold a Spanish "conversacion" in the game room every Thursday night. No charge will be made. The mechanical drawing class is still open for beginners.

Much interest was shown in the two-man ragtime bowling tournament which was held during January. Following are the winners: First prize, gold medals, W. L. Dalton and G. A. Barte, 570; second prize, silver medals, Louis DePoorter and G. A. Barte, 569; third prize, bronze medals, F. N. Bull and E. A. Wright, 569. Mr. DePoorter won the tie against Wright and Bull. Other scores of 550, or over, were as follows: Durand and DeMoll, 564; Kiernan and Wells, 562; Duryea and Barte 561; C. R. Harrington and DeMoll, 555; Dillon and, Barte, 555; Luckey and Barte, 551; Severn and Barte, 550.

CRISTOBAL.

Gorgona won the indoor baseball game played at Cristobal on Saturday night, February 4, the score being 12 to 11. The batteries were: Gorgona—Weiser and Ridge; Cristobal—Russell and McSparren.

A members' "smoker" will be held on Friday night, February 10, in honor of the basketball team which won the interassociation league championship for 1910. Statistics will be read showing the standing and final results. The Gatun team has been invited to attend.

Entries for the athletic meet to be held at Empire on Washington's Birthday will close on February 10. Cristobal expects to enter 15 men.

The pool and billiard match between Gatun and Cristobal played on Saturday night, February 4, resulted in Gatun winning three out of five games, and the match.

Owing to the band concert to be given on Wednesday night, February 1, the "Life problem" club meeting will be postponed until the next night, Thursday. The leader will be H. L. Stuntz. Hereafter, Wednesday night will be the regular meeting night of the club.

Two additional bowling alleys have been ordered for the Cristobal clubhouse and will probably be ready for use about March 1. Two alleys will be held for large pins and two for duckpins, so that special matches may be carried on simultaneously. Additional space for spectators will also be arranged for.

PORTO BELLO.

Fifteen men have entered the pool tournament. Each game consists of 100 points. All games must be played by February 25, and a prize of a bath robe will be awarded to the winner of the tournament. The following men are entered: Beardsley, Bradley, Carpenter; Elliott, Hays, Hill, Jackson, Millar, Ross, Thomson; Tuttle, Wallen, Morrison, Morgan, and Humburg.

The standing in the checker tournament up to February 4, is as follows:

Name.	Played.	Won.	Lost.
Mackintosh	7	7	0
Arden	7	6	1
Fleckstein	5	4	1
Taylor, T	4	3	1
McDevitt	5	3	2
King	4	2	2
Jackson	3	1	2
Beardsley	5	0	5
Colberg	4	0	4
Rogers	3	0	3
Taylor, J. B	2	0	2
Bradley	2	0	2
Gordon	2	0	2
Tuttle	1	1	0

COROZAL.

The pool tournament that was to start on the first of the month will begin on Saturday, February 11. The men that desire to join should hand their names to the secretary.

Gymnasium classes will be started soon. Shoes and suits can be secured at the clubhouse.

The pressing club opened February 2. Rates are: Four suits, $1.50; two suits, $1; nonmember, one suit, $1, in a period of 30 days.

The club has 104 members.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISEOBAL.

Cristobal	P. R. R	Thursday	Feb. 2
Allianca	P. R. R	Saturday	Feb. 4
Colon	P. R. R	Friday	Feb. 10
Advance	P. R. R	Thursday	Feb. 16
Panama	P. R. R	Thursday	Feb. 23
Allianca	P. R. R	Wednesday	Mar. 1
Colon	P. R. R	Tuesday	Mar. 7
Advance	P. R. R	Monday	Mar. 13
Panama	P. R. R	Saturday	Mar. 18
Allianca	P. R. R	Friday	Mar. 24
Colon	P. R. R	Friday	Mar. 31
Advance	P. R. R	Thursday	Apr. 6
Panama	P. R. R	Wednesday	April 12
Allianca	P. R. R	Tuesday	April 18

CRISTOBAL TO NEW YORK.

Panama	P. R. R	Friday	Feb. 10
Allianca	P. R. R	Thursday	Feb. 16
Colon	P. R. R	Wednesday	Feb. 22
Advance	P. R. R	Tuesday	Feb. 28
Panama	P. R. R	Tuesday	Mar. 7
Allianca	P. R. R	Monday	Mar. 13
Colon	P. R. R	Sunday	Mar. 19
Advance	P. R. R	Saturday	Mar. 25
Panama	P. R. R	Friday	Mar. 31
Allianca	P. R. R	Thursday	Apr. 6
Colon	P. R. R	Wednesday	April 12
Advance	P. R. R	Tuesday	April 18

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible, leaving Cristobal on or about the 11th and 28th of each month. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Zacapa	U. F. C	Thursday	Feb. 2
Orotava	R. M	Saturday	Feb. 4
Sibiria	H.-A	Saturday	Feb. 4
Almirante	U. F. C	Thursday	Feb. 9
Prinz Aug. Wilhelm	H.-A	Saturday	Feb. 11
Santa Marta	U. F. C	Thursday	Feb. 16
Thames	R. M	Saturday	Feb. 18
Sarnia	H.-A	Saturday	Feb. 18
Metapan	U. F. C	Thursday	Feb. 23
Prinz Joachim	H.-A	Saturday	Feb. 25
Tagus	R. M	Saturday	Mar. 4
Sibiria	H.-A	Saturday	Mar. 4

COLON TO NEW YORK.

Metapan	U. F. C	Thursday	Feb. 9
Prinz Joachim	H.-A	Tuesday	Feb. 14
Zacapa	U. F. C	Thursday	Feb. 16
Tagus	R. M	Monday	Feb. 20
Sibiria	H.-A	Tuesday	Feb. 21
Almirante	U. F. C	Thursday	Feb. 23
Prinz Aug. Wilhelm	H.-A	Tuesday	Feb. 28
Santa Marta	U. F. C	Thursday	Mar. 2

NEW ORLEANS TO COLON.

Cartago	U. F. C	Wednesday	Feb. 1
Turrialba	U. F. C	Saturday	Feb. 4
Parismina	U. F. C	Wednesday	Feb. 8
Abangarez	U. F. C	Saturday	Feb. 11
Heredia	U. F. C	Wednesday	Feb. 15
Atenas	U. F. C	Saturday	Feb. 18
Cartago	U. F. C	Wednesday	Feb. 22

COLON TO NEW ORLEANS.

Atenas	U. F. C	Thursday	Feb. 9
Cartago	U. F. C	Thursday	Feb. 9
Turrialba	U. F. C	Thursday	Feb. 16
Parismina	U. F. C	Thursday	Feb. 16
Abangarez	U. F. C	Thursday	Feb. 23
Heredia	U. F. C	Thursday	Feb. 23
Atenas	U. F. C	Thursday	Mar. 2

COLON TO BARBADOS, CALLING AT TRINIDAD.

Orotava	R. M	Tuesday	Feb, 14.

The next sailing of the Leyland Line will be as follows: Memphian on or about February 18, for New Orleans via Kingston, Ja.

Hamburg-American steamers leave for New York every Tuesday at 10 a. m.; for Jamaica every fortnight, connecting there with steamers for all points in Cuba; for Port Limon every Tuesday, direct, or by way of Bocas del Toro.

Royal Mail steamers leave for New York on alternate Mondays at 5 p. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursday at 3 p. m.; for New Orleans via Port Limon and Puerto Barrios on Thursday at 4 p. m., and for New York on Thursday at 11 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3d and 20th of each month.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, FEBRUARY 15, 1911. No. 25.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

A Dry Season Freshet.

A freshet in the Chagres River on February 12 and 13 delayed work in the Chagres section of the Central Division. The rise in the river was quite unexpected, coming as it did in the middle of the dry season. The record of the freshet for the principal river stations, follows:

Station.	Rise began.		Crest of rise.		Range. Feet.
	Time.	Elevation.	Time.	Elevation.	
	Feb. 12.		Feb. 12.		
Vigia...	1.30 p. m.	126.2	10.00 p. m.	145.5	19.3
Alha'la.	3.00 p. m.	92.7	11.00 p. m.	105.5	12.8
			Feb. 13.		
Gamboa	5.00 p. m.	45.6	3.00 a. m.	58.3	12.7
Gatun..	10.00 p. m.	13.1	3.00 p. m.	15.7	2.6

The crest of the flood passed Bohio at 10 a. m., February 13, and the following maximum elevations are reported: Gorgona, 53.4; San Pablo, 41.0; Tabernilla, 35.1; and Bohio, 21.1; at Gatun Lake the rise was only 2.6 feet.

The discharge at Alhajuela previous to the beginning of the flood was 1,400 cubic feet per second; the maximum discharge eight hours later was 38,500 cubic feet per second. Only one freshet is recorded for the month of February reaching a greater height at Gamboa, that of February 1, 1909—elevation 64.8. Only three times during the whole of the year of 1910 was a greater elevation of the river recorded at this station—May, 61.90; August, 60.35; and December, 64.50.

The rainfall producing the freshet was nearly all in the headwaters of the Chagres River, and above Alhajuela. The storm passed southerly across the Isthmus, and was probably most severe in the extreme upper branches of the river. From 5 p. m., February 11, to 5 p. m., February 12, the following rates of rainfall are reported: Porto Bello, 3.67 inches; Alhajuela, 0.98 inches; El Vigia, 1.13 inches; Gamboa, 0.03 inches.

In the section of the Central Division between Gatun and Gamboa, work was suspended on February 13 and 14, except at Chagrecito, where the two steam shovels were not flooded. Eight steam shovels digging near Gorgona were inundated, as were three orange peel dredges. The trestle bridge at Gorgona was damaged. The shovels, forced to suspend until the water subsides, were excavating about 10,000 cubic yards a day. All the shovels will resume digging this week.

Swamp Land at Balboa to be Reclaimed.

The swamp lying between Ancon and Sosa Hills, and bounded on the north by the Panama railroad track, will be filled by the Central Division, which will use the area, about 68 acres, for a dump for material from Culebra Cut. The land will be brought up to the grade of the railroad tracks, which will require an average fill of between five and six feet. It is estimated that about 930,000 cubic yards of material will be required to make the fill. The land thus reclaimed will be freed immediately from the menace of mosquito breeding, and in the future will be valuable for building purposes. A channel will be dredged through the toes of the old Sosa-Corozal dam into the terminal basin proposed for the Pacific end of the Canal, so that the drainage may pass into the basin.

Slide on East Bank of Culebra Cut.

About 10 o'clock on the night of February 9, a section of the east bank of the Canal 1,100 feet in length. opposite the Y. M. C. A. clubhouse at Culebra, broke away and settled almost vertically for a distance of about 30 feet, carrying away the berm below it on the 135-foot level, and displacing laterally this berm and all material west of it up to the pioneer drainage cut, which was almost completely closed. The berm on the 135-foot level, below the break, varied in width from about 20 feet at the south end to 100 feet in the middle of the break, and 50 feet on the north limit of the break. All loose or broken material lying above this berm had been entirely cleared away by steam shovel only a few days previously.

The entire amount of material in motion aggregates about 550,000 cubic yards, of which about 375,000 cubic yards lay outside of the theoretical slope of the Canal and about 175,000 cubic yards within the theoretical limit of the Canal prism. In addition to the material now in motion, as stated above, from 50,000 to 75,000 cubic yards of moving clay will have to be removed from the upper level on the east bank, connecting the shovel cuts thus made with the old French 90-meter level.

The season since December 27 has been unusually dry, less than one-quarter of an inch of rain having fallen since that date, and the material in motion, as a consequence, was almost perfectly dry. There had not been any drill holes loaded with dynamite fired along the east bank in the vicinity of this break for about 10 months. the little blasting done in this vicinity being confined solely to "dobeying," or breaking up, of pieces of rock brought down in the preceding slides.

A steam shovel, a coal train with its locomotive, and two trains of Lidgerwood flats, without locomotives, were caught in the slide, but all have been extricated. All four of the tracks east of the center pioneer cut were carried away, but two of them were restored and ready for operation of trains Friday afternoon. The pioneer cut was filled up, but a pump was installed to the north, and, it is expected, no inconvenience from this source will be experienced.

The 550,000 cubic yards estimated for the slide of February 9, added to the yardage of the slides that have occurred since July, 1910, do not exceed the total of 6,104,000 cubic yards allowed for slides in the Central Division in the revised estimate of total excavation made at that time; nor will the added excavation increase the estimate of cost of excavation in the Central Division made in October, 1908.

Removal of Culebra Hotel.

On account of the breaks in the ground under the hotel at Culebra, indicating that the building is within the limits of the slide on the west side of Culebra Cut at that village, it has been decided to tear down the annex to the hotel, and from the material to build a mess hall on some site removed from the region of slides. This mess hall will be a one story structure large enough to accommodate the white bachelor employes now at Culebra. It will be ready for use, and will be moved into, as soon as the slide develops to an extent that will make further occupancy of the present hotel undesirable.

Consolidating Stores.

The storehouse near Las Cascadas, and the small supply house at Empire, formerly maintained by the Central Division, will be abandoned, and the stock therein transferred to the storehouses of the Quartermaster's Department at those points, from which the Central Division will draw its supplies for the work in the vicinity, in future. A list of supplies, including lubricants and spare parts, required to be carried in the storehouse at Las Cascadas, will be furnished the Quartermaster's Department. The storehouse car near Juan Grande, the storehouse at Bas Obispo. and the storehouse car in the Cut between Culebra and Cucaracha will be maintained by the Central Division until the steam shovel work in those neighborhoods has been completed.

Freight Transportation for Gatun River Natives.

It has been customary for the natives living along the upper Gatun River to bring bananas, and other fruits and produce, to Gatun by boat. The recent closing of the river, near Mitchellville on the Panama railroad relocation, has shut off this traffic, compelling the natives to follow the railroad

NOTES OF PROGRESS.

(*Continued.*)

right-of-way into Gatun, and to carry their produce on foot, or pack it on a pony. Inasmuch as only a few own ponies, and, in order to relieve the people of any hardship caused by the closing of the Gatun River to navigation, the railroad company has been authorized to transport their market produce to Gatun, and to carry back for them, free of cost, the ordinary purchases they may make there. An empty cold storage car will be provided for this service on Monday morning of each week.

Gatun Dam Spillway.

Concrete was placed in the spillway of Gatun Dam, during the week ending February 11, as follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
February 6	304	8:30	1
February 7	262	9:00	1
February 8	220	11:00	2
February 9	222	17:00	2
February 10	240	13:00	2
February 11	264	17:00	2
Total	1,512	75:30	1.67
Previously reported	115,762		
Grand total	117,274		

⅓-Yard Mixer Record.

The ⅓-yard concrete mixer in use at the Miraflores Locks established a new Isthmian weekly record for machines of this size during the week ending February 4. Its total output in 49.50 hours actual working time was 700 cubic yards, making an average output per hour of 14 cubic yards, equivalent to 42 mixings. Its best previous record was for the week ending November 15, 1910, when its output was 569 cubic yards.

Ancon Crusher.

The amount of rock crushed at Ancon quarry during the weeks ending February 4 and 11 is shown in the following statement.

DATE.	Hours worked.	Cubic Yards.
January 30	9:55	3,477
January 31	9:00	2,347
February 1	6:40	2,515
February 2	9:20	2,955
February 3	7:45	3,051
February 4	9:00	3,115
Total	51:40	17,460

DATE.	Hours worked.	Cubic Yards.
February 6	9:00	2,793
February 7	9:05	2,910
February 8	9:20	3,548
February 9	9:50	3,523
February 10	7:50	2,168
February 11	8:40	2,796
Total	53:45	17,738

Diamond drill explorations, to determine the character of the material that will be encountered in making the foundations for the permanent bridge over Culebra Cut at Empire, have been begun.

New Issue of Canal Zone Stamps.

In 1910, shortly before the increase in the postal registration fee from eight to 10 cents was made by the United States Postal Department, the Division of Posts of the Canal Zone Government had ordered from the Panama Government 500,000 postage stamps of the 13-cent denomination. These were to be used principally in the foreign registry business, and were intended to cover both the registration charge of eight cents, and the foreign postage charge of five cents for mailing ordinary letters. By the time the stamps were printed, the increase in the fee had been made effective in the Canal Zone, and, therefore, the stamps could not be used to advantage in their original denomination. An arrangement was recently entered into with the Panama Government by which the stamps were taken over, surcharged in the usual manner, and their denomination changed from 13 to 10 cents, thus making them usable in connection with the existing registration fee. They are now on sale at the various Canal Zone post-offices.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Over 53 per cent of the concrete for the system of three twin locks at Gatun has been laid, the exact amount in place at the close of work on February 11, being 1,106,687 cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending February 11, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
February 6	2,344	38:56	6	420	8:40	2	226¼	3,008¾
February 7	2,188	36:19	6	594	8:40	2	230½	3,173½
February 8	2,268	37:53	6	588	8:40	2	192	3,204
February 9	2,454	37:30	6	552	8:40	2	220¾	3,351¾
February 10	2,380	38:12	6	568	8:40	2	216¾	3,263¾
February 11	2,384	41:38	6	526	8:40	2	198	3,192
*Portable mixers				643½				
Total	14,018	229:08	6	3,891½	50:40	2	1,284¼	19,193¾
Previously reported								1,087,493¼
Grand total								1,106,687

*The 643½ yards shown for the portable mixers were placed on the following days, and are included in the total shown for each day, and of this amount, 371 yards were reinforced concrete: February 6th, 18½ yards; February 7th, 161 yards; February 8th, 156 yards; February 9th, 125 yards; February 10th, 99 yards; February 11th, 84 yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is over 64 per cent completed, 537,946 cubic yards, out of a total of 837,400, having been placed at the close of work on February 11. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT.						Large stone.	Total.
				2-cubic yard mixers.			⅓-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete Placed.	Hours worked.	No of mixers.		
	Cu. Yds.			Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
Feb. 6	1,128	16:00	2	286	6:33	2	37	1:00	1		1,451
Feb. 7	802	13.00	2	636	13:50	2	27	6:75	1		1,465
Feb. 8	964	14.00	2	412	10:00	2	17	4:50	1		1,393
Feb. 9	1,058	14:00	2	280	7:50	2	9	1:00	1	3	1,350
Feb. 10	1,128	14:00	2	506	12:00	2				6	1,640
Feb. 11	1,054	14:00	2	548	15:33	3				8	1,610
Total	6,134	85:00	2	2,668	64:66	2.16	90	13:25	1	17	8,909
Previously reported										4,154	529,037
Grand total										4,171	537,946

MIRAFLORES LOCKS.

Over nine per cent of the concrete for the system of locks at Miraflores was in place on February 11, the total amount on that date being 129,785 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	AUXILIARY PLANT.										Total.
	2-cubic yard mixers.			⅓-cubic yard mixers.			⅓-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
Feb. 6	462	12:90	2	379	23:50	3	112	8:00	1	10	963
Feb. 7	396	11:00	2	317	19:50	3	56	4:50	1	13	782
Feb. 8	390	6:50	2	109	7:00	1	23	1:50	1	15	537
Feb. 9	484	8:50	2	348	19:25	3	97	7:00	1	8	937
Feb. 10	520	10:50	2	284	19:50	3	96	7:00	1	14	914
Feb. 11	468	14:83	2	322	22:00	3	79	6:00	1	5	874
Total	2,720	64:23	2	1,759	110:75	2.66	463	34:00	1	65	5,007
Previously reported										3,023	124,778
Grand total										3,088	129,785

STEAM SHOVEL RECORDS.

Work in Central Division in January.

During the month of January, the total amount of material excavated in the Central Division was 1,614,362 cubic yards, of which 456,002 cubic yards were classified as earth, and 1,158,360 cubic yards as rock.

Of this quantity, 1,585,406 cubic yards were removed by steam shovels, 2,680 cubic yards by scraper, and 9,452 cubic yards by bucket cranes. Contractors removed 10,672 cubic yards by sluicing, and 6,152 cubic yards by hand.

The high record for the month was made by shovel No. 204, working 25 days in the Culebra district, which excavated 60,591 cubic yards—36,355 cubic yards of rock, and 24,236 cubic yards of earth. The second best record for the month was made by shovel, No. 213, working 25 days in the Culebra district, which excavated 54,986 cubic yards of rock.

The best record for a shovel of the 70-ton class was made by shovel No. 114, working 25 days in the Chagres district, which excavated 35,426 cubic yards of earth.

Shovel No. 204, working in the Culebra district, made a high record for one day, by excavating 3,401 cubic yards of rock and earth on January 3. Shovel No. 115, working in the Chagres district, excavated 1,840 cubic yards of earth on January 10, this being the high record in January, for one day, for a shovel of the 70-ton class.

Except where noted, monthly reports are computed by place measurement, while the daily reports are based on car measurement. The best records for the month, and for one day, are shown below:

BEST RECORDS FOR THE MONTH.

CHAGRES DISTRICT.

Shovel No.	Cubic Yards.			
	Earth.	Rock.	Total.	No. of days at work.
114	35,426	....	35,426	25
104	33,685	....	33,685	25

EMPIRE DISTRICT.

Shovel No.	Earth.	Rock.	Total.	No. of days at work.
228	....	40,856	40,856	25
253	....	36,920	36,920	25
221	....	37,232	37,232	25

CULEBRA DISTRICT.

Shovel No.	Earth.	Rock.	Total.	No. of days at work.
204	24,236	36,355	60,591	25
213	....	54,986	54,986	25
256	....	54,614	54,614	25

PEDRO MIGUEL.

Shovel No.	Earth.	Rock.	Total.	No. of days at work.
231	38,310	6,620	44,930	25

BEST RECORDS FOR ONE DAY.

Shovel.	Location.	Date.	Character of material excavated.	Cubic yards.
115	Chagres	Jan. 10	Earth	1,840
115	Chagres	Jan. 9	Earth	1,810
114	Chagres	Jan. 12	Earth	1,790
201	Empire	Jan. 30	Rock	2,527
201	Empire	Jan. 28	Rock	2,375
228	Empire	Jan. 4	Rock	2,337
215	Empire	Jan. 30	Rock	2,318
228	Empire	Jan. 20	Rock	2,242
215	Empire	Jan. 25	Rock	2,228
204	Culebra	Jan. 3	Rock and earth	3,401
256	Culebra	Jan. 14	Rock and earth	3,325
204	Culebra	Jan. 11	Rock and earth	3,249
204	Culebra	Jan. 5	Rock and earth	3,192
204	Culebra	Jan. 10	Rock and earth	3,154
223	Culebra	Jan. 19	Rock	3,096
231	Pedro Miguel	Jan. 4	Rock	2,375
231	Pedro Miguel	Jan. 9	Rock	2,242
231	Pedro Miguel	Jan. 20	Rock	2,223
231	Pedro Miguel	Jan. 6	Rock	2,204
231	Pedro Miguel	Jan. 7	Rock	2,204

Daily Record for Steam Shovels Broken.

On February 3, 1911, fifty steam shovels, working in the Central Division, excavated 74,210 cubic yards of material, or an average of 1,484.2 cubic yards per shovel for the 8-hour working day. This is the highest average per shovel, per day, for all shovels, ever made in the Central Division.

PERSONAL.

Brigadier-General R. M. O'Reilly, Medical Corps, U. S. A., retired, and Mrs. O'Reilly, arrived on the *Allianca* on February 10.

The Honorable Frank Buchanan, Member-elect of Congress from Illinois, is on the Isthmus inspecting the Canal work.

Mr. E. A. Drake, vice-president of the Panama Railroad and Steamship Company, accompanied by Mrs. Drake and a party of friends, arrived on the Isthmus on the *Cristobal*, on February 10, and will return on the same steamer on February 19. Mr. Drake has been officially connected with the Panama Railroad Company for 23 years, and this is his first visit to the Isthmus.

The Red Cross Ball.

Both the dining room and the sitting room of the Hotel Tivoli will be used for dancing at the annual ball of the Canal Zone Chapter, Red Cross, on Saturday night, February 18. The Commission band will play in one room, and the Marine band in the other. Dancing will be over at 12 o'clock, and a special train will leave for the north shortly after that hour. The sale of tickets indicates that the attendance will be large. In answer to an inquiry, it is stated that each ticket represents individual membership in the Chapter, and, therefore, will be accepted for the admission of only one person, and ladies, as well as men, will require tickets.

Spanish War Veterans.

The undersigned has been informed that the national officers, Spanish War Veterans, will arrive on the Isthmus on March 2, for the purpose of forming four camps, S. W. V. Those who have not done so, are directed to communicate with

Charles C. Cameron.

Culebra, C. Z., February 5, 1911.

Athletic Meet at Empire.

There are 185 entries, representing 73 different individuals, in the 14 contests for men scheduled for the athletic meet at the Empire baseball park on February 22. In addition, there are 38 entries, representing 21 different individuals, in the two events for boys. The entries, by towns, are as follows:

Place.	Men.	Boys.
Ancon	8	1
Camp Elliott	15	0
Cristobal	15	6
Culebra	3	4
Empire	6	4
Gatun	10	6
Gorgona	15	0
Porto Bello	1	0
Total	73	21

The following officials have been appointed for the meet: Referee, J. T. Hopkins; clerk of course, William E. Burrell; assistant clerks of course, E. M. Foster, G. C. McCullough, J. A. Jamieson, W. R. Hodgson; track judges, H. P. Sollenberger, chairman, C. N. Rogers, W. H. Brown, C. H. Ourand, E. O. Smith; scorers, William E. Burrell, chairman; W. H. Kromer, Sergt. A. A. A. Allen; inspectors, W. H. Geer, chairman; H. R. Seaton, S. Fill, Bert Shell; announcer, J. Mack Holt; marshals, Lieut. H. Kehm. L. A. Brynes, L. C. Calloway.

No special train will be run for the occasion, the contestants using the regular trains on that date, which will be operated in accordance with the Sunday schedule. The Isthmian Canal Commission Band will furnish music. The admission to the park will be: Adults, 50 cents; children, 25 cents.

Fire Department Tournament at Gatun.

A fire department tournament will be held by the three volunteer companies at Gatun on the morning of February 22. The company winning the tournament will be presented with an American flag, 5 x 8 feet, which will become the property of the company winning it three times consecutively. The company winning the tournament will be entertained by the two other companies at a banquet at the Gatun hotel on a date to be determined later, probably February 25. The events, and the point value of each, are as follows:

1. Wheels of cart to be on mark and start made from pistol shot, run 150 yards to standpipe, connect and lay 150 feet of hose, disconnect last section, put on nozzle. Time to be taken from pistol shot to first sight of water. Each company will be furnished with dry hose. Each company must reel its own hose, the same to be inspected by the other companies, if desired. Forty-five points.

2. Lay parallel four 50-foot lengths hose, all male couplings in line with standpipe. Make running connections, put on nozzle, turn on water, and straighten hose. Time taken from crack of pistol to appearance of water at the nozzle. Hands up at crack of pistol. Twenty-eight points.

3. With water flowing at full head through three (3) lengths 50-foot hose and nozzle on, replace middle length with one from the reel, which is to stand at least twenty-five (25) feet beyond nozzle. Time to be taken from crack of pistol until water appears at nozzle after new length has been inserted. All men in the company to be along with live line at crack of pistol. Hands up at crack of pistol, except pipemen. Fifteen points.

4. With one (1) length 50-foot hose coupled on itself at least two turns, run 50-feet, break coupling, and put on nozzle. Each company allowed two trials with same man, or different men, and best time to be taken. Time to be figured from crack of pistol to dropping of connected nozzle on the ground. Twelve points.

Postal Business and Canal Zone Revenues.

The report of the Director of Posts for the month of January shows that 16,751 money orders were issued, amounting to $413,964.14. Of this amount, $308,894.55 was payable in the United States, $104,601.09 in orders payable in the Canal Zone, and $468.50 in orders payable in Martinique. The fees collected amounted to $1,828.06, and the amount of orders paid and repaid during the month was $87,452.09.

Postal sales during the month amounted to $6,703.90, and newspaper postage amounted to $2.48.

The revenue collections for the month were, as follows:

Distillation licenses	$42.84
Motor vehicle licenses	558.00
Retail liquor license	600.00
Taxes, licenses, etc	9,874.02
Total	$11,074.86

CENTRAL DIVISION TRAINS.

Classes of Equipment Used for Transporting Material, and Method of Operation.

Since July 1, 1910, the amount of excavated material handled by the transportation equipment of the Central Division has been greater than for the corresponding period at any other time since the beginning of operations by the United States. A description of how this material is handled, follows:

The entire train service of the Central Division is operated and controlled solely by the officials of that division, although the tracks of the Panama railroad are used in reaching the Dam at Gatun and the dumps at Balboa. When on the Panama railroad tracks, the block offices of that railroad keep a record of the time of passing of all Central Division trains. In addition, the chief dispatcher of the Central Division also keeps a record of all Central Division trains while on the Panama railroad, with delays, etc.

The transportation officials of the Central Division consist of a superintendent of transportation, an assistant superintendent of transportation, a chief dispatcher, an assistant dispatcher, and the necessary yardmasters. The offices of the superintendent, and of the chief dispatcher, are located in the division office at Empire.

In handling excavated material, two general types of cars are used—Lidgerwood flats, from which the material is plowed off by a Lidgerwood unloader and plow, and Oliver and Western dump cars, from which the material is spilled by tipping the car. On some of these cars, this is done by pneumatic pressure, but on most of them by hand. The Lidgerwood flat car has a rated capacity of 19 cubic yards, place measurement; the larger size Oliver and Western dump cars, of 17 cubic yards capacity, and the smaller size, of 10 cubic yards capacity.

Trains running to Gatun; to the dumps on the Panama railroad relocation; to Miraflores and to Balboa, are made up, as follows: Lidgerwood trains for Miraflores and Balboa contain 20 cars of the capacity previously mentioned; Lidgerwood trains dumped on the relocation are made up of 21 cars each. Trains consisting of the larger sized Oliver and Western dump cars number 27 cars; those of the smaller size, 35 cars.

The trains in use on the Chagres section consist entirely of small Western and Oliver dump cars, and the length of the train varies from six to 15 cars, depending upon the grade and the distance to the dumps. Thirteen of these trains are drawn by old French locomotives.

The transportation equipment assigned to the Central Division at the present time is, as follows:

Locomotives (American)	130
Locomotives (French)	30
Lidgerwood flats	1,666
17-yd. Oliver and Western dump cars	352
10-yd. Oliver and Western dump cars	589
Ballast cars	24
Wreckers	4
Unloaders	25
Plows	36
Spreaders	13
Track shifters	5

As an example of the amount of work accomplished with the equipment above mentioned, the record for January 30, 1911 is given. On this date, 51 steam shovels and two orange peel cranes were working, and their aggregate output was 74,208 cubic yards, which gave a total of 284 trainloads of excavated material transported by the different types of trains mentioned, in the following proportions: 2,639 Lidgerwood flats; 300 large Western and Oliver dump cars; 1,809 small Oliver and Western dump cars.

There were in service on this date in the Central Division a total of 156 locomotives, of which 117 were serving shovels, seven were handling spreaders, ten were handling unloaders, four were handling track shifters, six were switching, four were handling labor trains, eight supply trains, and other miscellaneous work. The material excavated was disposed of at the following dumps:

	Cubic Yards.
Gatun Dam	9,417
Miraflores dumps	13,210
Balboa dumps	16,260
P. R. R. relocation dumps	21,241
East Mamei dump	1,070
West Mamei dump	840
Point 4 dump	4,120
Juan Grande dump	1,090
Culebra dump	2,570
Obispo Diversion	740
Total	70,558

The remainder was used in repairing roads, filling in for the Panama railroad, etc.

Work of Lidgerwood Unloaders.

A statement of Lidgerwood cars unloaded in the Central Division during the month of January, follows:

LOCATION.	No. of unloaders.	No. of trains.	No. of cars.
Balboa	3	1,046	20,920
Miraflores	3	847	16,940
Gamboa	4	1,084	21,737
Total	10	2,977	59,597

Missing Men.

Any one having information regarding the whereabouts of Percy M. Buchanan, who is thought to have come to the Isthmus two years ago, is requested to communicate with the American Legation in Panama.

Any one having information regarding the whereabouts of E. D. Ennis, who was last heard from at Cristobal, is requested to communicate with E. L. Ennis, Columbus, Texas.

Colon Club Dance Postponed.

The regular dance of the Colon Club, scheduled for the evening of February 18, will be postponed on account of the ball to be given under the auspices of the Red Cross Society at the Hotel Tivoli on that evening.

Boys' Organizations.

The boys of section No. 2 of the Anti-Cigarette League of Gorgona held an election of officers on Wednesday evening, February 8, the following being chosen: President, Julius Heinter; secretary, Albert LaRock; treasurer, Lee Ward; sergeant-at-arms, Earl Tate; librarian, Robert Burns; superintendent, Mrs. A. L. Hackenberg.

The Gatun Anti-Cigarette League, which was recently organized, with Mrs. George Whiston as superintendent, has a membership of 15 boys between 10 and 17 years of age. Meetings are held every Friday evening in the Commission chapel.

The "boy scouts" held a meeting on Saturday morning, February 11, and formed a preliminary organization. Seventeen boys were present. The boys will meet from 7 to 8 o'clock on Monday and Tuesday nights, and will receive instruction in the elements of the "boy scout" movement. Following this, and upon passing an examination, they will be allowed to become "tenderfeet." On Saturday evening, February 4, the members spent the day in the jungle. Dinner was cooked by the boys without cooking utensils. A. O. Ludwig is the scout master.

Steam Shovel and Dredgemen.

The I. B. of S. S. and D. M. will hold its regular meeting at the I. C. C. lodge hall, Empire, on Sunday, February 19. It is very important that all brotherhood men attend this meeting.

W. P. TUDOR,
Secretary and Treasurer.

Empire, C. Z., February 10, 1911.

Electrical Workers.

The next regular meeting of Local No. 214, I. B. E. W., will be held in Ancon lodge hall on Sunday, February 19, at 1.30 p. m. All members are requested to be present, in order that a photograph may be taken.

Panama Canal Service Medal Association.

A meeting of the Panama Canal Service Medal Association will be held in Kangaroo Hall, Empire, on Sunday, February 19, at 9 a. m. All members, together with persons qualified to join, are invited to be present.

E. F. J. GOLDSMITH, *Secretary.*
P. O. Box 41.

Ancon, C. Z., February 9, 1911.

Rainfall from February 1 to 11, 1911, inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	.59	11	1.02
Balboa	1.01	11	1.42
*Miraflores	1.30	11	1.30
Pedro Miguel	.78	11	.84
Rio Grande	.35	11	.42
Central Section—			
Culebra	.37	11	.44
*Camacho	.07	9	.13
Empire	.21	11	.32
Gamboa	.11	5	.32
*Juan Mina	.07	5–9	.21
Alhajuela	.03	9	.05
*El Vigia	.05	9–11	.11
*Gorgona	.65	6	1.14
San Pablo	.14	5	.27
Tabernilla	.08	5	.20
Bohio	.15	4	.38
*Monte Lirio	.21	5	.47
Atlantic Section—			
Gatun	.26	9	.78
*Brazos Brook	.40	5	1.01
Cristobal	.18	6	.69
Porto Bello	.22	9	†1.02
*Nombre de Dios	.18	4	.77

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

To 5 p. m., February 10.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, February 11, 1911. All heights are in feet above mean sea level.

DAY AND DATE	STATION.				
	Vigia.	Alhajuala	Gamboa.	Bohio.	Gatun Lake.
Sun. Feb. 5	125.9	92.4	45.3	13.0	13.0
Mon. Feb. 6	125.9	92.4	45.3	13.0	13.0
Tues. Feb. 7	125.9	92.4	45.3	13.0	13.0
Wed. Feb. 8	126.2	92.6	45.4	12.9	12.9
Thurs. Feb. 9	126.5	92.8	45.6	12.9	12.9
Fri. Feb. 10	126.5	92.9	45.9	13.0	13.0
Sat. Feb. 11	126.7	93.1	46.1	13.1	13.1
Height of low water	125.0	92.0	45.0		

FOUND—At Culebra, one pair eyeglasses and case, purchased from Franklin & Co., opticians, Washington, D. C. Apply to W. P. Copeland, Culebra, C. Z.

WATER PRESSURE AT LOCKS.

Relative Density of Fresh and Salt Water, and Size of Culvert Outlets, Considered.

Experiments are being conducted at Gatun to determine the proper size of the openings through which water from the lower locks at Gatun and Miraflores will be emptied into the Canal below the locks. On account of the difference in density between fresh and sea water, it is necessary to adjust with considerable nicety the size and the elevation of the outlets of the culvert systems, and the experiments are carried on with a model, the inside of which is a facsimile of the outlet as it will be built at the end of each culvert.

In emptying the lower lock there comes a time, theoretically, when the salt water at the outlet of the culverts exerts a unit pressure into the culvert equal to the unit pressure from the fresh water in the lock, and, therefore, the flow ceases. When this occurs the water in the locks may be at a higher elevation than the water below, the difference in elevation depending on the relative density of the water, and the location and size of the outlet. This possible difference in the elevation of the water surface may cause a pressure against the lock gates, which must be kept within the limits of the capacity of the gate operating machinery. The main discharge culverts are 18 feet in diameter, and, as it is desired to have the outlet consist of several smaller openings, it becomes necessary to find such a size for these small openings, as will not reduce the full discharge capacity of the main culvert, and will prevent the heavy salt water from getting into it. If the openings are too small, the discharge will be reduced, and if they are too large, there is a possibility that the salt water will get into the main culvert and stop the flow of water from the lock, before the levels equalize nearly enough to permit the gates to be opened.

The experiments are being conducted in accordance with the recommendation of a board consisting of Lieut.-Col. H. F. Hodges, Maj. Chester Harding, and Mr. John M. G. Watt, appointed for the purpose of determining what means should be taken to obviate dangers resulting from tidal action and from difference of density. The details of a method of overcoming the tidal pressure on the lower guard gates are now being studied. After discussing the effect of the difference of density, the board finds that it will be safe to omit all precautions in this respect, except at the lowest operating gates in each flight at Gatun and Miraflores. The report continues:

"It has been stated that, in theory, a level for the discharge culvert can be found at which the effect of the difference in salinity at the two sides of the gates may be reduced to a manageable amount, or even to zero, with unchanging conditions of density and lift. * * * * * With a range of tide such as is experienced at Gatun, a position for the culvert can be found at which the maximum resultant pressure on the gate will be less than one ton. At Miraflores, where the tidal range is much greater, a position for the surface of contact for the salt and fresh water, i. e., for the discharge opening of the culvert, can be found at which the maximum resultant pressure will be well within the strength of the operating mechanism.

"With the discharge opening in a vertical plane, it is obvious that different conditions as to density would exist at the top and bottom ends of the vertical diameter of the opening, and it might be possible for water of greater density to be flowing inward at the bottom of the culvert, and at the same time fresh water flowing out at the top. If, however, the openings are in a horizontal plane, it is believed that this contingency will be practically avoided.

"The board proposes, therefore, that below the lower valves the culvert be turned upward to discharge through openings in a horizontal plane, the position of this plane being fixed for the two lock flights at the positions established by the analysis, i. e., at elevation —21 at Gatun (21 feet below sea level), and at elevation —25 at Miraflores. The discharge of the culvert will then be at nearly the position of theoretical equilibrium of unit pressure, so that any resultant flow from one side to the other, due to difference in density of water, can be at first only slight. At the same time the resultant pressure on the gate will be within manageable limits. * * * * * *

"In order to avoid interfering with the efficiency of discharge, the openings in the horizontal plane, through which the water escapes from the culvert, should manifestly be larger in area than the minimum area of the culvert itself. The board is not prepared to state what proportion these areas should bear to each other, and suggests that this matter should be made the subject of experiment."

Civil Service Examinations.

Examinations will be held, probably on March 5, for the positions of stenographer and typewriter and of typewriter in the Isthmian Canal Service. Examination for clerk in the Isthmian Canal Service will be held probably on March 12. The next examinations to be held for stenographer and typewriter and for typewriter will be about April 30, and for clerk in October next.

Request should be made at once for application form and a copy of the Manual of Examinations, stating in each case the examination it is desired to take. Applications for examination on March 5 will be received only up to March 1, and for the clerk examination only up to March 7.

The following named examinations may be held in the near future, and information in regard thereto may be obtained from the Manual of Examinations, a copy of which may be had on request; application therefor must be filed in this office not later than February 25: Assistant, bookkeeper, civil engineer, and teacher (male), in the Philippine Service; civil engineer and superintendent of construction, in the Quartermaster's department at large; engineer, and teacher, in the Indian Service; civil engineer and draftsman.

All instructions found in application form, and in the Manual of Examinations concerning an examination applied for, should be read very carefully, to avoid unnecessary returning of application for correction, which in some cases delays certification. In connection with information required to be furnished in applications in regard to legal residence of applicants, it is to be noted that legal residence does not require continuous bodily presence, but refers to the place at which the applicant, if a voter, is legally entitled to exercise the right of suffrage.

JOHN K. BAXTER,
Secretary, Isthmian Civil Service Board.
Culebra, C. Z., February 6, 1911.

Fatal Accident at Pedro Miguel.

Alex. LaRue, an American, employed by the McClintic-Marshall Construction Company in the work of dismantling berm crane "G" at Pedro Miguel, was struck and fatally injured by a train on one of the storage trestles in the forebay of the locks on Wednesday, February 8. He was 27 years of age, unmarried, and had been on the Isthmus 17 days. His previous residence was at Norfolk, N. J.

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the week ending February 11, follows:

DATE.	Hours worked.	Cubic Yards.
February 6	7:44	3,591
February 7	7:54	3,641
February 8	7:53	3,727
February 9	8:27	3,664
February 10	6:39	2,695
February 11	9:34	4,042
Total	48:11	21,360

Kearney Sentenced.

Bernard L. Kearney, convicted of the embezzlement of post-office funds at San Pablo, was sentenced to one year in the Culebra penitentiary by Judge H. A. Gudger, in the Circuit Court at Empire, on Tuesday, February 14.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Culebra, C. Z., on Sunday, February 19, 1911, at 5.45 p. m. The program follows:

1 March—*With Sword and Lance*..........Starke
2 Selection—*Madame Sherry*............Hoschna
3 Intermezzo—*Bridal Song from the Rural Wedding*........................Goldmark
4 Overture—*Semiramide*....................Rossini
5 Waltz—*The Lion and the Mouse*..........Bendix
6 Medley Selection—*My Southern Rose*..Von Tilzer
7 March—*Tannhauser*......................Wagner
8 Selection—*Carmen*..........................Bizet
9 March—*I. C. C. Bond*....................Jorge A.

CHAS E. JENNINGS, *Musical Director.*

The next concert will be given at Bas Obispo on Sunday, February 26, at 6 p. m.

CLASSIFIED EXPENDITURES.

A statement of classified expenditures under the Isthmian Canal Commission to December 31, 1910, follows:

PERIOD.	Department of Civil Administration.	Department of Sanitation.	Department of Construction and Engineering.	General Items.	Total.
Total to June 30, 1909	$3,427,090.29	$9,673,539.28	$69,622,561.42	$78,022,606.10	$160,745,797.09
Total, fiscal year 1910	709,351.37	1,803,040.95	26,300,167.05	2,863,088.83	31,675,648.20
July, 1910	58,474.88	156,006.64	2,216,849.78	280,015.85	2,711,347.15
August, 1910	63,887.05	164,220.65	2,348,777.07	336,961.35	2,913,846.12
September, 1910	60,586.46	153,433.27	2,516,814.41	236,170.76	2,967,004.90
October, 1910	37,250.26	146,587.47	2,565,042.28	295,537.33	3,044,417.34
November, 1910	71,981.80	137,912.89	2,356,292.01	233,587.25	2,799,773.95
December, 1910	69,424.73	144,754.71	2,480,221.44	179,047.95	2,873,448.83
Total	$4,498,046.84	$12,379,495.86	$110,406,725.46	$82,447,015.42	$209,731,283.58

SOCIAL LIFE OF THE ZONE.

Women's Clubs, and other Events.

The meeting of the home department of the Cristobal Woman's Club was held in the clubhouse on Wednesday, February 8. Mrs. P. T. Murphy read a paper on tropical fruits and vegetables. There was a piano solo by Mrs. Humphreys and Mrs. J. Diers sang a group of Danish folk songs, accompanied by Mrs. Frank Ullrich. Refreshments were served.

The meeting of the Gatun club on Friday, February 10, was under the home department. The club is planning for an art afternoon, with papers, and the Federation traveling art gallery will be exhibited.

Work on the Gatun playground has already begun. The committee on equipment has succeeded in raising a bond, which insures the payment of all expenses connected with its work. The association is looking forward to the completion and opening of the playground before the end of the dry season.

Isthmian Lodge, No. 1, Daughters of Rebekah, Gorgona, held a ball at the clubhouse on Saturday evening, February 11, the object being to establish a hospital fund for the benefit of the women of the order.

The next meeting of the Paraiso Women's Club will be held on Thursday, February 23, instead of on Wednesday, February 22.

The Pedro Miguel Women's Club will hold a social meeting at the home of Mrs. Mark White, Ancon, on Saturday evening, February 18, members and their husbands being invited. There will be a special train from Pedro Miguel and return. The regular meeting of the club, scheduled for February 22, will be omitted, and the next business meeting will be held at the home of Mrs. Ed Brown, Pedro Miguel, on March 1.

The "Pedro" club of Pedro Miguel held a "poverty party" at the social hall on Saturday evening, February 11. There was informal dancing, a sale of fancy articles, and several card tables were provided. There was a large attendance.

At a recent meeting of the Empire Woman's Club, each member brought a guest, and the afternoon was spent informally, refreshments being served.

On Wednesday evening, February 8, the residents of Empire held a reception at the clubhouse in honor of Chaplain and Mrs. A. A. Nellis, and Mr. and Mrs. W. H. Warr. A musical program was given consisting of a duet for violins by Mrs. W. H. Decker and Miss Jessie Smith, a vocal duet by Mrs. Alfred Dickson and Mrs. Mary G. Shivers, and solos by Alfred Dickson and Frank Connors. Addresses were made by Mr. Nellis and Mr. Warr. Refreshments were served.

The Empire Masonic Club will hold a banquet in the Commission hotel on Tuesday evening, February 21. W. W. Warwick will be the toastmaster. The members of the club will be accompanied by their wives.

The Culebra Club held a concert at the clubhouse on Thursday evening, February 8, those taking part in the program being, as follows: Vocalists, Mrs. A. Faure, Mrs. D. F. Donahue, Messrs. Kramer, Kersey, Tupper, Freeman French, Purchase, Case, Hall, Crandall, Lee, and Tucker; pianist, H. E. Bronson; violinist, Mrs. Donahue; reader, F. A. Kearns, and the Culebra orchestra. The attendance was good.

Cristobal Lodge, No. 2 I. O O.F., will hold a picnic at Toro Point on Washington's Birthday, February 22. The use of one of the Atlantic Division tugs to convey the members, their families and friends to and from the Point has been authorized.

Church Notes.

A schedule of special Lenten services to be held in St. Luke's hospital chapel, Ancon, has been arranged, as follows: Ash Wednesday, March 1, Holy Communion at 7 a. m.; morning prayer and litany at 10 a. m.; evening prayer and address at 8 p. m. Every Wednesday, morning prayer and litany, 9 a. m.; every Friday, morning prayer and litany at 9 a. m., and evening prayer and address at 8 p. m. The services for Holy Week will be announced later.

A benefit dance and euchre party for St. Mary's Church, Star of the Sea, Roman Catholic, East Balboa, will be held in the social hall over the Commission hotel at Old Balboa on Saturday evening, February 18.

There will be a series of special services at St. James' Episcopal Church, Empire, on Thursday evenings during Lent. The preachers will be as follows: March 2, the Rev. Mr. Griffiths of Gatun; March 9, the Rev. J. B. Bicknell of Ancon; March 16, Chaplain H. A. Brown of Culebra; March 23, the Rev. Mr. Mulcare of Culebra; March 30, the Rev. E. J. Cooper of Colon; April 6, the Rev. A. C. Peck of Panama. A series of outdoor services will be conducted by the chapter of the Brotherhood of St. Andrew on Tuesday evenings during Lent at the following places: Golden Green, Lirio, Cunette, New Town, Empire, and Camacho.

The members of the Women's Altar Society of the church of St. Ferdinand, Roman Catholic, Empire, is raising funds for a new baptismal font for the church. The men's society will present a set of new pictures representing the Stations of the Cross. Several improvements have been made in the building. A garden has been laid out on the side fronting the railroad, and a statue of the Virgin Mary, made in France, has been placed in the center of it.

Gatun Lodge, Independent Order of Odd Fellows will attend the services at the Commission chapel on Sunday evening, February 19. The Rev. Mr. Purdy will preach on the principles of Odd Fellowship. The members of the organization will assemble in the lodge hall over the chapel at 7.30, and proceed to the chapel in a body.

On Sunday, February 12, the services at the Gatun chapel were commemorative of Lincoln. The Rev. Mr. Purdy preached on "Lincoln, the man."

Nobles of the Mystic Shrine.

A meeting of the Nobles of the Mystic Shrine, the first of the gatherings it is proposed to hold annually, has been arranged for Saturday evening, March 4, at Hotel Tivoli. There are about 56 members of this Masonic branch on the Isthmus, representing 38 temples in the United States. The committee in charge of the arrangements consists of Gerald D. Bliss, Pedro Miguel, chairman; Francis W. Walraven, Las Cascadas, secretary; Quincy A. Hall, Gorgona; Alonzo Hunter, C. R. Bryon, George W. Healey, Gatun; John Burke, Cristobal; C. P. Gibson, Empire; Henry M. Eagelston, Corozal. A special train will be provided for the occasion, leaving Colon at 6.30 p. m.

BASEBALL.

PANAMA CANAL LEAGUE.

RESULTS OF GAMES, FEBRUARY 12.

At Ancon—Ancon, 3; Atlantics, 2.
At Empire—No game—postponed.
At Cristobal—Commissary-Subsistence, 0; Empire, 2 .

STANDING OF CLUBS.

	P.	W.	L.	P.C.		P.	W.	L.	P.C.
Com-Sub.	8	7	1	.875	Gorgona.	7	3	4	.429
Ancon...	8	6	2	.750	Atlantics	8	2	6	.250
Empire..	8	5	3	.625	Marines.	7	0	7	.000

SCHEDULE FOR FEBRUARY 19.

At Ancon—Ancon vs. Commissary-Subsistence.
At Empire—Empire vs. Marines.
At Colon—Atlantics vs. Gorgona.

SUMMARIES OF GAMES, FEBRUARY 12.

Ancon.	AB.	H.	PO.	A.	E.
RDren'n,cf.	4	2	1	0	0
LDren'n,rf.	3	0	1	0	0
Caldwell,c.	4	1	4	3	0
James,ss...	4	1	2	4	0
Nygren,1b.	4	0	13	2	0
Snyder,2b..	3	1	2	1	0
Hunter,3b.	4	0	2	2	0
Russell,lf..	3	0	1	0	0
Hull,p.....	4	0	0	4	1
Totals...	33	5	*26	16	1

Atlantics.	AB.	H.	PO.	A.	E.
Hennessy,ss	3	1	2	0	2
Gamble,2b..	3	0	0	1	1
Herring,lf..	4	3	4	0	0
Edwards,1b.	3	2	7	0	1
Yingling,c..	4	0	7	2	0
Osborne,rf..	4	0	1	0	0
Sullivan,cf..	4	1	2	0	0
Pearman,3b	3	1	2	2	0
Davis,p....	4	1	2	2	1
Thompson†.	1	0	0	0	0
Totals...	33	9	27	7	5

Ancon..............	1	0	0	1	0	0	1	0	0—3
Atlantics..........	0	0	1	1	0	0	0	0	0—2

†Yingling out for foul bunt on 3d strike.
*Batted for Pearman in 9th inning.

Runs—Ancon: R. Drennan (2), Nygren; Atlantics: Herring, Pearman. Runs earned—Atlantics, 1. Two base hit—Davis. Sacrifice hits—Russell, Edwards. Stolen bases—R. Drennan (2), Caldwell, L. Drennan, Snyder (4), Herring, Hennessy, Edwards. Bases on balls—Off Davis, 2; off Hull, 2. Struck out—By Davis, 6; by Hull, 3. Left on bases—Ancon, 6; Atlantics, 7. Double plays—Pearman to Edwards. Umpire—Lawler. Time of game—2.00. Scorer—J .K. Munroe.

Empire	AB.	H.	PO.	A.	E.
Bryan,3b..	5	2	0	0	0
Moore,c...	4	1	16	2	0
Markley,ss.	3	1	0	1	0
Barney,rf..	3	0	1	0	0
Wright,1b..	3	0	9	1	1
Herring,lf..	4	0	0	0	0
Tretter,p..	4	0	0	4	0
Dough'y,2b	4	0	1	2	1
Murphy,cf.	4	0	0	0	0
Totals...	34	4	27	10	2

C.-S.	AB.	H.	PO.	A.	E.
Buchanan,ss	4	0	1	2	2
Breivogle,2b	4	0	2	1	1
Curtis,3b...	4	0	0	0	0
Mosher,cf..	4	0	0	0	0
Meegan,c..	4	2	15	1	2
Guptil,1b..	3	0	7	0	0
Hodnett,rf.	1	0	0	0	0
Sullivan,lf..	2	0	0	0	0
Kellogg,p..	3	0	0	2	3
Horrigan,lf.	0	0	0	0	0
Rutherford*	1	0	0	0	0
Totals...	30	2	†25	6	8

Empire............	0	0	0	0	0	0	0	0	2—2
Com.-Subsistence...	0	0	0	0	0	0	0	0	0—0

*Batted for Sullivan in 7th inning.
†Barney out foul bunt on 3d strike; Tretter out foul bunt on 3d strike.

First base on errors—C.-S., 1; Empire, 4. Stolen bases—Markley (2). Bases on balls—Off Tretter, 1; off Kellogg, 2. Struck out—By Tretter, 15; by Kellogg, 13. Hit by pitcher—By Tretter, 2 (Curtis, Hodnett); by Kellogg, 3 (Moore, Barney, Murphy). Left on bases—Empire, 9; C.-S., 5. Double play—Moore to Wright. Umpire—Freel. Time of game—2:20. Rain delayed game 10 minutes. Scorer—J. P. Mead. Attendance—1,214 paid admissions.

Game was protested by the Commissary-Subsistence team on account of Empire playing four of Gorgona's players who had not been released and properly signed.

Family Quarters.

Applications for married quarters were on file, February 1, as follows:

PLACE.	No. 1 List.		No. 2 List.	
Ancon..........................	4	(2)	34	(1)
Ancon Hospital....................	1		4	
Balboa........................	2	(1)	36	(8)
Corozal.........................	....		35	(9)
Cristobal........................	1		129	(4)
Culebra........................	4		18	
Empire........................	3		45	(13)
Gatun..........................	1	(1)	146	(60)
Gorgona........................	17	(2)	145	(41)
Las Cascadas-Bas Obispo.........	4		17	(6)
Miraflores........................	....		1	
Pedro Miguel-Paraiso..............	6		54	(19)
Porto Bello......................	1		21	(4)
Tabernilla......................	....		2	(1)
Toro Point.....................	1		8	(3)
Total.....................	45	(7)	695	(169)

The figures in parentheses show the number of applicants already occupying regular or nonhousekeeping family quarters at stations, other than those at which applications are filed.

Lost—At Pedro Miguel, or Empire, or on the train between those places, a triangular pin bearing the Greek letters "OREAD," and the inscription "F. A. S." Return to Miss F. A. Scofield, Culebra, C. Z.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

COROZAL.

A game of indoor baseball on Saturday evening between Cristobal and Corozal resulted in a score of 11 to 4 in favor of Cristobal.

A pool tournament will begin on February 15.

Gymnasium classes will be held on Monday and Wednesday evenings at 8 o'clock. All gymnasium work will be followed by basketball, baseball, or some other recreative game.

CULEBRA.

Three teams were entered in the "Rapid transit" chess contest on Tuesday evening, February 7. C. M. Wilson won the match.

The 200, or over, bowling scores for the week ending February 11 are, as follows: Hall, 230, 234, 225, 214; Warner, 213; Conlan, 202.

The next three sessions of the "Topic" club will be under the leadership of the Rev. A. A. Nellis, and the meetings will be held on Monday nights at 7.45 o'clock.

EMPIRE.

Work on the extension of the clubhouse for the new bowling alleys was begun on February 6.

On Tuesday evening, February 7, the machinists took two out of three games from the Central Division, and on Thursday, February 9, the Examination of Accounts team took three straight from the machine shops in the local bowling league series, by the following scores:

Machinists.			
Reiman	155	141	168
Danielson	118		
Argue	159	200	156
Peterson	201	160	145
Shaughnessy	201	187	178
Parkis		168	163
Total	834	856	810

Central Division.			
Cohen	169	141	146
Koperski	103	178	143
Hobbs	156	189	169
Booth	126	149	130
Potter	182	192	172
Total	736	849	760

Examination of Accounts.			
Drake	195	146	159
VanBrocklin	162	130	186
Sawtelle	137	145	135
Bardelson	200	168	182
Pearson	167	178	177
Total	861	767	839

Machine Shops.			
Snyder	127	144	150
Fretz	123	136	
Anderson	144	147	122
Gustavson	141	158	152
Edwards	157	136	153
Nelson			133
Total	692	721	710

Beginning February 14, weekly group contests will be held in the gymnasium for which prizes will be given. In addition to the regular gymnasium work, one of these events will be run off each week. The attendance at the gymnasium on February 10, was 25.

The following high scores were bowled during the week, exclusive of tournament games: Pinney, 216; Edwards, 225, 200; Giavelli, 209; Goolsby, 209; Hobbs, 201. Duckpins—Rhodeghiero, 100, 130; Witmer, 100, 101; West, 100; McLeod, 100; Scull, 100.

At the discussion under the auspices of the literary society on February 17, the subject will be "The power of mind over matter," and the leader will be F. P. Wagg. The society is preparing a program for the evening of Washington's Birthday.

Gaul's "Holy City" will be sung by the musical section of the Empire Musical and Dramatic Society on Sunday evening, February 26.

GORGONA.

Bowling scores of 200, or over, for the past week are as follows: Halderman, 202; Gailliott, 207; Stewart, 200, 244; W. Miller, 200; Gaedke, 202; Bordt, 214; Canfield, 227; Stoehr, 204. Duckpins, 100, or over—Gailliott, 111; Otis, 102, 106; Davis, 102; Kaufman, 101.

The Gorgona Dramatic Club played "Esmeralda" on Friday, February 10. So many were unable to secure seats that the play will be repeated on Friday, February 24. Dates have been arranged for performances at the National Theatre in Panama, Cristobal, Corozal, Gatun, Empire, and Culebra.

The track men have been working under Captain Simka, and 15 men are entered in events for the athletic meet at Empire on Washington's Birthday.

A "gym" class is being organized for the benefit of the men who work nights. It will meet Tuesday and Thursday afternoons at 1 o'clock.

Candidates for the indoor baseball team are to report for practice on Monday and Thursday nights of each week at 8 o'clock. A few minutes of calisthenics will precede the regular practice.

GATUN.

Those interested in chess and checkers met in the game room on Saturday night, February 11, and formed a club, electing C. R. Harrington, president, and R. E. Chatfield, secretary. A tournament will be started just as soon as a schedule can be arranged. Any member may join. The following men have already entered: W. C. Gayer, F. J. Severy, R. E. Chatfield, W. H. Brown, C. R. Harrington, A. J. McLean, G. A. Barte, F. H. Wang, Chas. Berg, V. Kernnish L. Crowell, and E. Dolliver.

The executive committee of the Gatun Carnival Association met on Friday evening, February 10. The tentative dates for the carnival are March 15, 16 and 17. A meeting of the association will be held on Thursday night, February 16.

A departmental bowling league is being organized. It is probable that the teams will represent the civil engineers, timekeepers, transportation men, concrete foremen, wood form men, draughtsmen, district quartermaster, and cableway men.

W. H. Green won a Gatun pennant for the single high score for tenpins for the month of January, 1911.

Gatun won two out of three bowling games, and also the total pinfall in the match with Empire on Saturday night, February 11.

A handicap duckpin tournament will be started on February 20.

A large number of the members met on Wednesday, February 8, and formed a debating club. E. C. Soule was elected temporary chairman, and W. H. Brown temporary secretary. An executive committee was appointed to draw up a constitution and by-laws. Thomas Walsh, business agent for Glenn Curtiss, gave a talk on modern aviation. A number of photographs of recent flights were then exhibited. The club will meet on Wednesday evening of each week.

E. C. Howe of Washington, D. C., will give an illustrated lecture on "Florida and the Everglades" on Saturday night, February 18. No admission will be charged.

The Gorgona Dramatic Society will give a play at the Gatun clubhouse on Monday, February 27.

Twenty-one men listened to C. O. Purdy's address to the "Life Problem Club", on Sunday, February 12. A discussion on "Preparation of a life work" followed.

CRISTOBAL.

In the local duckpin tournament the following games were played during the week ending February 11:

Miscellaneous.			
Morrell	79	79	82
Furlong	95	91	70
Blackburn	84	83	79
Rabbitt	89	86	88
Herring	118	86	83
Total	465	425	402

Dry Dock.			
Claherty	78	81	91
Wheeler	80	80	73
Rosteck	76	77	74
Gibson	93	108	84
Adams	80	93	85
Total	407	439	407

Commissary-Subsistence.			
Herrington	83	75	90
Thompson	83	94	82
DeCora	85	81	79
French	81	92	90
Bullard	87	94	94
Total	419	436	435

Quartermaster's			
Barrett	89	87	86
Jacques	76	80	94
Hess	75	76	69
Howard	113	106	80
Louch	90	89	86
Total	443	438	415

Miscellaneous.			
Morrell	84	81	82
Furlong	96	80	78
Grover	81	79	
Rabbitt	72	99	75
Herring	86	82	98
Blackburn			86
Total	419	421	419

Quartermaster's.			
Barrett	96	86	84
Jacques	93	83	99
Hess	87	78	80
Howard	100	76	76
Louch	68	82	91
Total	444	405	430

The following scores were made during the month of January: Bigpins—Blackburn, 247; greatest number of games rolled, Furlong, 104; high average for the month, Louch, 171.8. Duckpins—High score, Louch, 113; greatest number of games rolled, Gibson 36; High average, Louch, 91.6.

A vaudeville show will be given on Friday night, February 24. Tickets will be on sale on Monday, February 20, at 7 p. m.

Fifteen men and six boys have entered the track meet to be held at Empire on February 22. J. H. Weller was elected captain of the track team at a meeting held on Tuesday, February 7.

The first series of topics of the "Life Problem" club was finished during the week ending February 11, under the leadership of H. L. Stuntz. The next series will begin on Wednesday, February 22, under the leadership of Judge Thos. E. Brown, Jr., who takes for his subjects, "Friends," "Clubs," "Social amusements," "The city'," "The family," and "The church."

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal, Colon and Balboa during the weeks ending February 4 and 11, 1911:

Aztec, January 29, from San Francisco, with 31 crates stovepipe for stock.

Queen Wilhelmina, January 30, from New York, with 14,077 barrels cement for Atlantic Division; 56,292 bags cement for Pacific Division.

Sarnia, January 30, from New York, with 50 cases paint, 136 cases blasting caps for stock.

Atenas, February 2, from New Orleans, with 201 bundles car parts for Mechanical Division; 75,129 feet yellow pine lumber, 1,043 bales prairie hay for stock.

Metapan, February 2, from New York, with 21 crates wooden handles, 60 bundles turnbuckles, 75 kegs boat spikes, 50 bundles steel bars, 29 pieces steel plate for stock.

Panama, February 3, from New York, with 25 packages pump parts, 91 packages dredge parts, 34 reels wire rope, 17 cases rubber dredge sleeves, 16 cases electrical machinery for Atlantic Division; 11 pieces castings, 19 cases castings for Central Division; 40 carboys acid, 1 ambulance for Sanitary Department; 16 packages carborundum wheels, 15 crates meat blocks, 63 cases enamel ware, 389 kegs rivets, 39 bales wool waste, 311 kegs bolts, 75 cases bolts, 72 cases air brake parts, 13 cases incandescent lamps for stock; and a miscellaneous cargo, the whole consisting of 1,508 packages, weighing 391 tons.

Snested, February 6, from Baltimore, with 809 tons lock construction material for Atlantic Division; 360 tons lock construction material, 630 tons steel rods and bars, 5 cases glass for Pacific Division; 220 pieces malleable iron castings for Mechanical Division; 224 tons steel bars, angles, etc., 60 cases steel shafting, 630 bundles galvanized pipe, 51 cases glass, 250 cases turpentine, 667 pieces sewer pipe for stock.

Musician, February 6, from Liverpool, with 6 coils wire rope, 1 case springs for Pacific Division.

Turrialba, February 9, from New Orleans, with 12 crates concrete machinery for Pacific Division; 20 bundles car repair parts for Mechanical Division; 25,837 feet B. M. yellow pine lumber, 3 crates track levels for stock.

Zacapa, February 10, from New York, with 40 cases scrub brushes, 160 bundles handles, 45 crates tool handles, 122 pieces steel angles, 3,539 sacks oats for stock.

Cristobal, February 10, from New York, with 23,770 barrels cement for Atlantic Division; 116,600 bags cement for Pacific Division.

Allianca, February 10, from New York, with 29 pieces castings, 4 reels wire rope for Atlantic Division; 25 packages electrical material for Atlantic and Pacific Divisions; 11 cases machinery for Pacific Division; 1,121 pieces castings for Mechanical Division; 375 cases glassware, 32 cases drugs and sundries for Sanitary Department; 34 cases drill parts, 20 pieces chain, 7 casks chain, 30 crates iron valves, 526 pigs lead, 307 kegs bolts, 104 cases bolts, 106 kegs rivets, 34 barrels rosin, 48 crates ranges, 83 bundles corn brooms for stock; and a miscellaneous cargo, the whole consisting of 2,513 packages, weighing 264 tons.

OFFICIAL CIRCULAR.

Standard Envelopes.

CULEBRA, C. Z., February 11, 1911.

CIRCULAR No. 366-A:

1. The standard sizes of envelopes for use of the Isthmian Canal Commission and of the Panama Railroad Company shall be as follows:

No.	Size.
White.	
6½	3⅝ x 6½
9½	4⅛ x 9½
Manila.	
6¾	3¾ x 6¾
9½	4⅛ x 9½
11½	5 x 11½
12¼	9¼ x 12¼
15	10 x 15

2. On envelopes for the Isthmian Canal Commission, one form of printing shall be used for all departments and divisions. In the upper left hand corner: "Isthmian Canal Commission, Canal Zone—Official Business;" in the upper right hand corner: The penalty stamp.

3. The printing of addresses on envelopes shall be discontinued. For this purpose the Depot Quartermaster has been authorized to furnish, on requisition, rubber stamps containing the names and addresses of the departments and divisions desired.

4. All departments and divisions of the Isthmian Canal Commission using memorandum letter heads shall use a stock form (C. E. 292–d), printed on 8x5¼ paper of the same quality as the regular letter head (C. E, 292–a), and put up in pads of 50 sheets each.

H. F. HODGES,
Acting Chairman, Isthmian Canal Commission.
Second Vice-President, Panama Railroad Company.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending February 22, 1911, (75th meridian time):

DATE.	Low.	High.	Low.	High.
	A. M.	A. M.	M.	P. M.
February 16	......	5.45	12.00	6.07
			P. M.	
February 17	12.23	6.25	12.40	6.45
February 18	1.05	7.05	1.20	7.23
February 19	1.47	7.45	2.05	8.00
February 20	2.30	8.25	2.45	8.42
February 21	3.17	9.10	3.35	9.30
February 22	4.10	10.10	4.40	10.25

COMMISSARY DEPARTMENT.

Commissaries Closed on Washington's Birthday.

CRISTOBAL, C. Z., February 15, 1911.

CIRCULAR No. 269:

This store will be closed on Washington's Birthday, Wednesday, February 22, 1911.

Patrons will be guided accordingly in placing their orders.

JOHN BURKE, *Manager.*

Approved: EUGENE T. WILSON, *Subsistence Officer.*

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning February 10.

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	6
Shoulder, neck trimmed off, (4 lbs. and over), per pound	[illegible]
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg, (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing per pound	8
Shoulder for roasting (not under 4 pounds), per pound	12½
Loin for roasting, per pound	19
Chops, per pound	24
Cutlets, per pound	28
Pork cuts, per pound	16
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	8
Corned, per pound	12, 14, 16
Chuck roast, (3 pounds and over), per pound	12
Pot roast, per pound	12½
Rib roast, second cut (not under 3½ pounds), per pound	16
Rib roast, first cut (not under 3 pounds), per pound	18
Sirloin roast, per pound	19
Rump roast, per pound	19
Porterhouse roast, per pound	20
Steak, Chuck, per pound	12½
Round, per pound	13
Rib, per pound	18
Sirloin, per pound	19
Rump, per pound	19
Porterhouse (not less than 1½lbs.) per pound	20
Tenderloin (Western) per pound	24
Tenderloin (Native) per pound	30

MISCELLANEOUS.

Livers—Beef, per pound	7
Calf, each	60
Half, each	30
Sausage—Pork, per pound	15
Bologna, per pound	10
Frankfurter, per pound	12
Lieberwurst, per pound	10
Sweet bread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	*29
½ dozen only	*16
Bluefish, fresh, per pound	16
Cod, fresh, per pound	10
Halibut, fresh, per pound	15
Oysters, in 1-qt. kegs, keg	50

POULTRY AND GAME.

Chickens—Fancy roasting, large, each	1.25
medium, each	1.00
Fowls, each	60, 70, 80, 90, 1 00
Ducks, large, each	1 30
medium, each	1.10
Broilers, each	60
Turkeys, per pound	28
Squabs, each	35
Rabbits, dressed, each	40
Pheasants, each	70, 1.00
Partridges, each	50
Grouse, each	85

CURED AND PICKLED MEATS.

	Price.
Ham—English York Cut, per pound	30
German, Westphalia, per pound	36
Sugar cured, per pound	18
Sliced, per pound	20
Half, for boiling, per pound	19
Boiled, per pound	25
Hocks, per pound	‡08
Picnic, Winchester, per pound	15
Bacon—Breakfast, whole piece, per pound	23
Breakfast, sliced, per pound	24
Beef, salt, family, per pound	9½
Pork, salt, family, per pound	14
Ox tongues, each	75
Pigs' feet, per pound	09
Tongues, per pound	14
Sliced Bacon in 1-lb tins, per tin	30
In 1-lb jars, per jar	30

DAIRY PRODUCTS.

Butter—Creamery special, per pound	*32
Cheese—Roquefort, per pound	38
Philadelphia Cream, cake	10
Young America, per pound	20
Swiss, per pound	26
Edam, each	1.00
Camembert, in large tins, tin	38
Camembert, in small tins, tin	14
Neufchatel, each	6
Gouda, per pound	34
Milk (Inspected or certified) per bottle	**25
(Pasteurized), bottle	**18
Buttermilk, bottle	**15
Ice cream, quart	‡25
Ice cream, ½-gallon	‡50

VEGETABLES AND FRUITS.

Beets, per pound	3
Celery, per head	6
Carrots, per pound	3
Cabbage, per pound	3
Cucumbers, per pound	10
Lettuce, per pound	15
½ pound	8
Onions, per pound	3½
Potatoes, white, per pound	2½
Sweet, per pound	2
Parsnips, per pound	3
Squash, per pound	4
Turnips, per pound	3
Yams, per pound	3
Apples, per pound	6
Cranberries, per pound	10
Grapes, per pound	16
Grapefruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12
Tangerines, each	2

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*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Misdirected Letters.

ANCON, C. Z., February 13, 1911.

The following insufficiently addressed letters originating in the United States and its possessions, have been received in the office of the Director of Posts, and may be secured upon request of the addressee:

LETTERS UNCALLED FOR FEBRUARY 6, 1911.

Bignone, José
Brown, W. F.
Butterfield, Mrs. J.
Cartier, Henry F.
Conner, Mrs. Frank
Culemea, Thos.
Dawdy, Mrs. Stella
Dilfill, Mrs. C. W.
Ellcock, A.
Estes, Dr. W. B,
Geiger, J. F.
Hartell, Mrs.——
Head, Fred A.
Hockenberry, C. P.
Hodapp, Frank
Hogan, Andrew V.
Holt, Mrs. John Mack
Johnston, A. B.
Kearney, Edward
Kerber, S.
Kimhall W. S.
Kitts, J. A.
Lampson, Orson
Lowe, Dr. F. E.
Luker, R. B.
Markham, William
Martin, Walice
Miller, J. C.
McCullough, D. H.
McDonald, H. J.
Ogston, Mrs. A.
Panagopulo, Pantaleon
Perkins, Samuel
Pots, F. A.
Racelo, Lorenzo
Ralich, Frank
Reichwaldt, C. H.
Rhods, Harry H.
Rhoads, Samuel N.
Riddle W. R.
Riley, M. J.
Rowf, Abdul
Seaton, H. R.
Schreiber, Max Wm.
Schiller, Mrs. Emmie
Shaffer, Carl
Smith, A. B.
Stewart, R. D.
Sloyds, John H.
Turnbull, Ida M. H.
Twitcnell, James
Weidner, Fraley N.
Wheeler, Pelham
Zane, Fred W.

LETTERS UNCALLED FOR FEBRUARY 13, 1911.

Armstrong, Joseph
Barnard, Mrs.
Bates, Fred
Bronso, F. R.
Cave, E. J.
Chisholm, Earl
Craft, Mrs. Florence
D'Apanjoider, K., 107713
Duncan, Chas. C.
Farlee, William A.
Harrison, W.
Healy, George W
Hillier, C. A.
Kirby, J. F.
Major, John J.
Malcolmson, Harry del
McAleer, Mrs.
McDonald, Lloyd
Merry, Mr. ——
Morrison, C. H. (Or C. W.)
Murray, W. E.
McGee, Richard
Nouland, Capt. C. P.
Patterson, Bartley
Perez, Louis
Ravlunovich, Anobrija
Reynolds, W. J.
Shell, Bertram E.
Stone D.
Vivian, Charles
Weintraub, Louis
Wilcox, Miss Ruth
Wright's studio

The following vessels arrived at and departed from the port of Balboa during the week ending February 11, 1911:

Arrivals—February 4, *Melville Dollar*, from San Francisco; *Manavi*, from Buenaventura and Tumaco; February 6, *Peru*, from Callao; February 9, *Pectan*, from Port Harford; *Ecuador*, from Guayaquil.

Departures—February 5, *Aztec*, to San Francisco; *Barracouta*, to Central American ports; February 6, *Rupanco*, and *Quito*, to Buenaventura and Tumaco; February 8, *Loa*, to Valparaiso; February 10, *Henry Villard*, to San Francisco.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Colon	P. R. R.	Friday	Feb. 10
Advance	P. R. R.	Thursday	Feb. 16
Panama	P. R. R.	Thursday	Feb. 23
Allianca	P. R. R.	Wednesday	Mar. 1
Colon	P. R. R.	Tuesday	Mar. 7
Advance	P. R. R.	Monday	Mar. 13
Panama	P. R. R.	Saturday	Mar. 18
Allianca	P. R. R.	Friday	Mar. 24
Colon	P. R. R.	Friday	Mar. 31
Advance	P. R. R.	Thursday	Apr. 6
Panama	P. R. R.	Wednesday	Apr. 12
Allianca	P. R. R.	Tuesday	Apr. 18
Colon	P. R. R.	Monday	Apr. 24
Advance	P. R. R.	Saturday	Apr. 29

CRISTOBAL TO NEW YORK.

Allianca	P. R. R.	Thursday	Feb. 16
Cristobal	P. R. R.	Sunday	Feb. 19
Colon	P. R. R.	Wednesday	Feb. 22
Advance	P. R. R.	Tuesday	Feb. 28
Panama	P. R. R.	Tuesday	Mar. 7
Allianca	P. R. R.	Monday	Mar. 13
Colon	P. R. R.	Sunday	Mar. 19
Advance	P. R. R.	Saturday	Mar. 25
Panama	P. R. R.	Friday	Mar. 31
Allianca	P. R. R.	Thursday	Apr. 6
Colon	P. R. R.	Wednesday	Apr. 12
Advance	P. R. R.	Tuesday	Apr. 18
Panama	P. R. R.	Tuesday	Apr. 25
Allianca	P. R. R.	Monday	May 1
Colon	P. R. R.	Saturday	May 6
Advance	P. R. R.	Friday	May 12

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Almirante	U. F. C.	Thursday	Feb. 9
Prinz Aug. Wilhelm	H.-A.	Saturday	Feb. 11
Santa Marta	U. F. C.	Thursday	Feb. 16
Thames	R. M.	Saturday	Feb. 18
Sarnia	H.-A.	Saturday	Feb. 18
Metapan	U. F. C.	Thursday	Feb. 23
Prinz Joachim	H.-A.	Saturday	Feb. 25
Zacapa	U. F. C.	Thursday	Mar. 2
Tagus	R. M.	Saturday	Mar. 4
Sibiria	H.-A.	Saturday	Mar. 4
Almirante	U. F. C.	Thursday	Mar. 9

COLON TO NEW YORK.

Zacapa	U. F. C.	Thursday	Feb. 16
Tagus	R. M.	Tuesday	Feb. 21
Sibiria	H.-A.	Tuesday	Feb. 21
Almirante	U. F. C.	Thursday	Feb. 23
Prinz Aug. Wilhelm	H.-A.	Tuesday	Feb. 28
Santa Marta	U. F. C.	Thursday	Mar. 2
Metapan	U. F. C.	Thursday	Mar. 9

NEW ORLEANS TO COLON.

Parismina	U. F. C.	Wednesday	Feb. 8
Abangarez	U. F. C.	Saturday	Feb. 11
Heredia	U. F. C.	Wednesday	Feb. 15
Atenas	U. F. C.	Saturday	Feb. 18
Cartago	U. F. C.	Wednesday	Feb. 22
Turrialba	U. F. C.	Saturday	Feb. 25
Parismina	U. F. C.	Wednesday	Mar. 1

COLON TO NEW ORLEANS.

Turrialba	U. F. C.	Thursday	Feb. 16
Parismina	U. F. C.	Thursday	Feb. 16
Abangarez	U. F. C.	Thursday	Feb. 23
Heredia	U. F. C.	Thursday	Feb. 23
Atenas	U. F. C.	Thursday	Mar. 2
Cartago	U. F. C.	Thursday	Mar. 2
Turrialba	U. F. C.	Thursday	Mar. 9
Parismina	U. F. C.	Thursday	Mar. 9

COLON TO BARBADOS, CALLING AT TRINIDAD.

Clyde	R. M.	Tuesday	Feb. 28

The next sailing of the Leyland Line will be as follows: Memphian on or about February 18, for New Orleans via Kingston, Ja.

Hamburg-American steamers leave for New York every Tuesday at 10 a. m.; for Jamaica every fortnight, connecting there with steamers for all points in Cuba; for Port Limon every Tuesday, direct, or by way of Bocas del Toro.

Royal Mail steamers leave for New York on alternate Tuesdays at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursday at 3 p. m.; for New Orleans via Port Limon and Puerto Barrios on Thursday at 4 p. m., and for New York on Thursday at 11 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3d and 20th of each month.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, FEBRUARY 22, 1911. No. 26.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting nformation, will receive attention unless signed with the ull name and address of the writer.

NOTES OF PROGRESS.

Acting Chairman's Report.

The report of the Acting Chairman of the Isthmian Canal Commission for the month of January is published in full in other columns of this issue of The Canal Record. It gives a detailed account of the progress of Canal work in all departments and divisions.

Reduction in Prices at Commissary.

A reduction in prices of staple articles at the commissaries has been made that will result in a net saving of $11,000 a month to the purchasing public. All tinned milk, of which 4,200 cases of 48 cans to the case are used each month, has been reduced from 10 to nine cents a tin; 5-pound bags of sugar, from 22 to 20 cents; American peas and corn, in tins, from 12 to 10 cents; fresh pork, from 16 to 14 cents a pound; fresh eggs, from 29 to 27 cents a dozen; working shirts and overalls, of which 12,000 are sold each month, reduced five cents a garment; and corresponding reductions have been made in many articles of wearing apparel.

Major Wendell L. Simpson, Assistant Purchasing Officer at New York, was on the Isthmus two weeks ago in consultation with the commissary on the purchase and delivery of supplies. He was accompanied by representatives of various firms in the States that supply goods to the commissaries, who wished to study local conditions, in order that their goods, and the packing of them, may conform with the requirements on the Isthmus.

Gatun Locks.

The placing of concrete in the third or lowest pair of locks at Gatun has been begun. Concrete work is in progress in all of the locks at Gatun, and the amount already placed, together with its proportion to the whole, is shown in a statement published elsewhere in this issue. On account of the unstable condition of the banks of the lower locks, where small slides have caused much inconvenience, the plan of construction during the dry season will be to complete the outer walls to a height of 25 feet in the places where the material is sliding, thus forming a retaining wall. The tracks for the cableways may then be extended the full length of the locks, and the walls may be completed during the next rainy season to their full height of 79 feet. The excavation in Gatun Locks is almost completed. All that remains to be taken out is a small amount of material in the northeast corner of the lower locks where a slide occurred recently.

It is expected that the first shipment of structural steel for the lock gates will arrive about April 1, and the preparations for handling it are advancing.

Apparatus for Lock Gate Construction.

Two 75-kilowatt motor-generator sets, with a switchboard for control of each, were received on the Isthmus on February 10. One of these sets will be placed in a substation at Gatun Locks, and the other in a substation at the Pedro Miguel Locks. They are furnished by the Commission in connection with the construction of the lock gates, and will operate on 25-cycle, 2200 volt energy transmitted from the power stations at Gatun and Miraflores. The motor-generators will convert the alternating current from the power houses to direct current at 220 volts for use on the various small tools required in the construction of the gates. In addition, the gate contractors will install, at their own expense, two motor-driven air compressors at each of the substations to operate the pneumatic tools.

Increase in Output of Porto Bello Crusher.

The increase in output of the crusher plant at Porto Bello, since the installation of the large No. 21 crusher, has made it possible to reduce the number of working hours each day from 16 to eight. In September, the day was reduced from 16 to 12 hours; in January, from 12 to 10, and on February 16, from 10 to eight hours. The output of the plant has increased from 150 cubic yards an hour to 300 cubic yards, and 70,000 cubic yards of crushed stone are now in storage at Gatun, a supply sufficient to last almost a month, even if no more rock was delivered there. A statement of the rock crushed during the week ending February 18, follows:

Date.	Hours worked.	Cubic Yards.
February 13	7:22	2,817
February 14	8:28	3,732
February 15	6:19	3,079
February 16	3:08	1,683
February 17	5:01	1,997
February 18	7:11	3,164
Total	37:29	16.472

Suction Dredging Near Mindi.

A trestle about 6,500 feet long has been completed at Mindi, parallel with and east of the Panama railroad, and it is now being filled with spoil from the excavation at Mindi and the locks. This fill will make a dike, behind which the suction dredge at work in the Canal channel between Mindi and Gatun Locks will pump about 4,000,000 cubic yards of material. The dredge *Sandpiper* is already excavating in this section, depositing its spoil on the flats between the dike which parallels the Canal in this place, and the Panama railroad. The pumping of the spoil back of the new dike will begin about March 1.

Gatun Filtration Plant.

The laying of concrete for the filter plant at Gatun has been begun, and the amount required will be about 1,200 cubic yards. The work includes the construction of a sedimentation basin about 75 feet square, of a filter house three stories high, and a clear water basin, with a capacity of about 225,000 gallons. The filter house will contain four rapid gravity sand filters on the first floor, an operating gallery on the second floor, and a storage room for materials on the third floor.

Cement Deliveries.

Commencing with the sailing of the cement ship *Cristobal* from New York about March 3, daily deliveries of cement to the Pacific Division will be reduced 800 barrels and deliveries to the Atlantic Division will be increased 500 barrels. Under the new arrangement, the Pacific Division will receive 2,700 barrels, and the Atlantic Division 3,500 barrels of cement per day. Five hundred barrels of the consignment to the Atlantic Division will be in bags. The deliveries to both divisions, beginning with the sailing of the *Cristobal*, will total 6,200 barrels per day, as compared with 6,500 barrels per day at the present time. Since January 19, 1911, the Pacific Division has been receiving on an average 4,281 barrels of cement daily and a considerable stock has been accumulated. On this account, in addition to serving the concrete mixing plants, and in order to ship empty cement bags to Colon, the division has been compelled to hold in service from 40 to 45 box cars. The matter of box car detention was recently made the subject of an investigation by a committee, consisting of Mr. S. B. Williamson, chairman; Messrs. W. J. Holmes and A. K. Stone, members, and the following recommendations were submitted, all of which have been approved by the Acting Chairman and Chief Engineer:

1. That as the detention of cars in the Pacific Division is primarily due to the irregular sailings of chartered cement steamers, thus causing a congestion in the shipments, the dates of their arrival be regulated, so that the Panama Railroad Company ship daily to the Pacific Division the approximate amount agreed upon.

2. That the Pacific Division be allowed to ship cars containing empty cement bags as soon as loaded, so that they may be stored in

NOTES OF PROGRESS.

(*Continued.*)

the Cristobal yard where there is more track room, and where, in cases of emergency, they can be unloaded on the docks to await the sailing of the *Ancon* or *Cristobal.* Hitherto, the Pacific Division has been required to hold these cars until the day previous to the sailing of one of these ships.

3. In order to provide against possible irregular deliveries in future, it was recommended that the Pacific Division increase its unloading forces temporarily, and that sheds, capable of holding one or two cars of cement, be erected at such of its mixing plants as are reasonably permanent, so that when a car shortage arises, these sheds may be utilized for supply purposes.

Gatun Dam Spillway.

Concrete was placed in the spillway of Gatun Dam during the week ending February 18, as follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
February 13............	254	17:00	2
February 14............	242	8:15	1
February 15............	336	17:30	2
February 16............	170	12:00	2
February 17............	332	17:00	2
February 18............	434	17:00	2
Total...............	1,768	88:45	1.83

After the sailing of the *Prinz August Wilhelm* from Colon on February 28, the steamers *Prinz Joachim* and *Prinz August Wilhelm* will call at Santiago de Cuba both outward and inward bound.

Canal Zone School Notes.

Two additional teachers have been engaged for the Canal Zone white schools. One has charge of the fourth grade, and one-half of the fifth, at the Ancon school; and the other, the third grade, and one-half of the fourth at the Cristobal school. The corps of teachers at the four largest schools now number, as follows: Gatun, 8; Ancon, 7; Empire, 6; Cristobal, 6. The total teaching force in the Canal Zone schools at present consists of 42 white, and 25 colored teachers. This is an increase over the last school year of six white, and four colored teachers. The enrollment also shows an increase. In January, 1911, it was: White, 1,048; colored, 1,209, a total of 2,257. In January 1910,, it was: White, 819; colored, 1,086; a total of 1,905. The January, 1911, enrollment shows an increase in the number of white scholars over the same month in 1910 of 229, and in the number of colored scholars of 123, a total of 352.

During the present school year, it is probable that steps will be taken looking to the establishnemt of suitable schools in the more important native communities in the Canal Zone. There are six or seven of these settlements, such as Majagual, situated on the trail from Mount Hope to Porto Bello; Cucaracha, near Culebra, and Las Sabanas, for which no school facilities have as yet been provided. The preliminary efforts will be confined to ascertaining, through the assistance of the police and revenue departments, the number of children of school age in each of these communities, and the amount of taxes paid. The places will then be visited by the Superintendent of Schools, or his representative, with a view of procuring information as to the actual requirements, including the necessary buildings, etc.

The school gardens for colored pupils, planted in 1910 at Balboa, Culebra, and Empire, have been continued. The one at Empire is especially prosperous, and, it is expected that $600, or more, in revenue will be derived from the sale of produce raised in it. The soil in the Culebra garden has not been brought to the same state of fertility as in the Empire garden, and it will be necessary to work and fertilize it for one or two more seasons before it can be made fully productive. At Balboa, the colored pupils are nearly all too small to work the garden successfully on their own account, and outside help, therefore, has had to be procured to carry it on.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Over 54 per cent of the concrete for the system of three twin locks at Gatun has been laid, the exact amount in place at the close of work on February 18, being 1,125,792¼ cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending February 18, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily. and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
February 13......................	2,410	41:08	6	586	8:40	2	189	3,286
February 14......................	2,730	45:25	6	452	8:40	2	246	3,460
February 15......................	2,472	40:02	6	432	8:40	2	200	3,141
February 16......................	2,458	41:36	6	386	7:40	2	165	3,051
February 17......................	2,384	39:44	6	384	7:40	2	179½	2,990½
February 18......................	2,464	39:00	6	454	7:40	2	222¾	3,176¾
*Portable Mixers..............	....	....	......	291	....	......	....	....
Total..........................	14,918	246:54	6	2,985	49:00	2	1,202¼	19,105¼
Previously reported..............	....	....	......	....	....	......	....	1,106,687
Grand total......................	....	....	......	....	....	......	....	1,125,792¼

*The 291 yards shown for the portable mixers were reinforced concrete, and were placed on the following days: February 13tb, 101 yards; February 14th, 32 yards; February 15th, 37 yards; February 16th, 42 yards: February 17th, 43 yards; February 18th, 36 yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is over 65 per cent completed, 547,251 cubic yards, out of a total of 837,400, having been placed at the close of work on February 18. The record for each of the six 8- hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT.						Large stone.	Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete Placed.	Hours worked.	No of mixers.		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
Feb. 13...	1,024	12:00	2	618	15:50	2	....	....	......	....	1,642
Feb. 14...	1,054	14:00	2	572	12:50	3	....	....	......	....	1,626
Feb. 15...	906	13:00	2	544	13:50	3	....	....	......	....	1,450
Feb. 16...	940	13:00	2	494	12:30	2	12	1:00	1	....	1,446
Feb. 17...	1,042	13:00	2	442	12:00	2	12	1:00	1	....	1,496
Feb. 18...	1,104	15:00	2	522	14:00	3	16	1:00	1	3	1,645
Total.....	6,070	80:00	2	3,192	79:80	2.5	40	3.00	.5	3	9,305
Previously reported.	....	....	......	....	....	......	....	....	......	4,171	537,946
Grand total...	....	....	......	....	....	......	....	....	......	4,174	547,251

MIRAFLORES LOCKS.

About 10 per cent of the concrete for the system of locks at Miraflores was in place on February 18, the total amount on that date being 134,684 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	AUXILIARY PLANT.										Total.
	2-cubic yard mixers.			½-cubic yard mixers.			¼-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
Feb. 13...	360	7:50	2	48	5:00	2	60	5:00	1	....	468
Feb. 14...	436	8:50	2	237	14:50	3	76	6:00	1	....	749
Feb. 15...	378	5:00	2	385	18:00	3	103	7:25	1	10	876
Feb. 16...	340	5:50	1	479	27:25	5	52	4:50	1	50	921
Feb. 17...	320	5:50	1	531	25:50	4	50	4:00	1	30	931
Feb. 18...	370	5:50	1	447	23:50	5	117	7:50	1	20	954
Total.....	2,204	37:50	1.5	2,127	113.75	3.75	458	34:25	1	110	4,899
Previously reported.	....	....	......	....	....	......	....	....	......	3,088	129,785
Grand total...	....	....	......	....	....	......	....	....	......	3,198	134,684

THE CIVIL ENGINEERS.

Program for Entertainment of Members of American Society.

A party consisting of one hundred members of the American Society of Civil Engineers, with a number of friends, will arrive on the Isthmus on March 9, and will be here until March 16. It will come in two sections, one by way of New Orleans, which will arrive at Colon in the morning on board a United Fruit Company ship, and the other by way of New York, which will also arrive on a United Fruit Company ship at 1 o'clock in the afternoon. A special train will leave Colon immediately after the arrival of the second ship, and the party first arriving will spend the interim in Cristobal, Colon, and Mount Hope. An outline of the program prepared for the entertainment of the engineers, follows:

Friday, March 10. Morning—Special train will leave Panama promptly at 8 o'clock. Enter Culebra Cut at the south end, pass through the 8½-mile Cut, and go out on the 95-foot berm at the north end. Cross the Chagres River on Gamboa bridge, and continue over the tracks of the relocated Panama railroad as far as New Frijoles. Return to Panama over the main line of the Panama railroad, making one stop en route at the principal manufacturing and repair shops of the Commission at Gorgona. Hotel Tivoli will be reached in time for lunch. Afternoon—Visits to Ancon Hospital and the Quartermaster's corral at Ancon.

Saturday, March 11. Morning—Special train will leave Panama at 8 o'clock for the Pacific Division, via Balboa, and will visit, in turn, the Agua Dulce pumping plant, hydraulic excavation in the Canal prism and Miraflores Locks, turbo-electric power plant at Miraflores, and Pedro Miguel Locks, thence over the main line of the Panama railroad to Culebra, where the main office building will be visited, and inspection made of relief maps and models of the locks and dam. Afterwards, Culebra Cut will be viewed from the top of the bank at Culebra. Train will bring party back to Hotel Tivoli in time for lunch. Afternoon—No special program. Evening—Dance and reception at the Hotel Tivoli.

NOTE—A trip to the Porto Bello rock quarry and crushing plant, and to the old town of Porto Bello, may be taken on Saturday, instead of the trip by special train through the Pacific Division scheduled above, if desired. Members of the Porto Bello party will leave Panama on regular train at 6.30 a. m., for Cristobal, and immediately upon their arrival at dock No. 13, will embark on a tug which will take them to Porto Bello and bring them back in time to catch the regular train which leaves Colon for Panama at 4.35 p. m.

Sunday, March 12—Trip will be taken to Taboga Island. Special train will leave Panama at 9.30 a. m., for Balboa, where the party will embark on tugs. Lunch will be served at the Commission's sanitarium on Taboga Island. Party will be returned to Hotel Tivoli in time for dinner. Evening—Concert by the I. C. C. Band at the Hotel Tivoli at 7.30 p. m.

Monday, March 13—Special train will leave Panama at 8 a. m., proceeding over the main line of the Panama railroad to Frijoles; thence over the tracks of the relocated Panama railroad to Gatun. Day to be spent at Gatun in viewing locks, dams, spillway, power plant, reservoir, etc. Lunch at the Gatun Hotel. Return to Hotel Tivoli for dinner.

Tuesday, March 14. Morning—Leave Panama by special train at 8 o'clock for Ancon quarry; thence to view operations on Balboa dump, and to inspect breakwater under construction to Naos Island. Return to Hotel Tivoli for lunch at 11.15 o'clcock. Afternoon—Special train will leave Panama at one o'clock for Balboa, where marine shops and docks will be inspected. Party will embark on tugs at 2 o'clock for inspection of Canal and dredging work between Agua Dulce, and the end of the Canal channel. Party will be landed at Balboa and returned to Panama by special train in time for dinner.

Wednesday, March 15. Morning—Leave Panama by special train at 8 o'clock going over the main line of the Panama railroad to Mindi, thence over the tracks of the Atlantic Division to the intersection of the French and American canals. After inspection of excavation work at Mindi, tugs will be boarded which will proceed down the American Canal, and up the French canal, returning to dock No. 11, Cristobal, where the party will land and take lunch at the Cristobal hotel. Afternoon.—Party may either visit Cristobal and Colon, take a trip to Toro Point, and inspect the construction of the breakwater there, or board the seagoing suction dredge *Caribbean*, and take a trip on it while it is working. The party going to Toro Point, or on the dredge *Caribbean*, will embark at dock No. 11 at 1 o'clock, and will be returned to Cristobal in time to take special train for Panama, which will leave dock No. 11, at 4.15 o'clock.

Thursday, March 16—Special train with entire party will leave Panama for Colon at 8 a. m.

Church Notes.

A ladies' auxiliary has recently been formed in connection with the Empire Christian League, the object being to assist in the care and adornment of the chapel. The auxiliary holds its meetings on the first and fourth Fridays in each month. Mrs. Philip Kelly is the president.

The members of the Ladies' Aid Society of the First Baptist Church, Empire, have formed a class for Bible study, which meets at the home of the pastor, the Rev. J. H. Coin, on Wednesday afternoons.

American Veterans of Foreign Service.

A meeting for the purpose of organizing a Post of American Veterans of Foreign Service will be held at the Cristobal Y. M. C. A., on Sunday morning at 10 o'clock, February 26. All honorably discharged soldiers, sailors and marines, who have served in Cuba, Porto Rico, the Philippines, Guam, and China during the period from April 21, 1905, to July 4, 1902, are eligible, and are urged to be present at this meeting.

Red Cross Ball.

As the result of the annual ball of the Canal Zone Red Cross, held at the Hotel Tivoli on the night of February 18, seventy-seven members have been added to the local organization, making a total of about 1,000, and $850 have been added to the treasury.

Revolver Match.

A revolver marksmanship match will be held at Culebra on March 19 to 26, inclusive, under the auspices of the Culebra Pistol Club, governed by the rules of the United States Revolver Association. It will be open to all comers; no entrance fee will be required, but contestants must use a Colt's revolver. A first prize, known as the Barham championship trophy—a 38-calibre, Colt's, officer's model, target revolver will be awarded for the best shooting. The match will consist of 30 shots at 20 yards at the American standard 20-yard target, any calibre and ammunition being permitted. The range will be open all day on the 19th and 26th, and from 12 to 2, and from 5 to 6.30 on week days. For additional information, address L. D. Cornish, Culebra, C. Z.

Obituary.

Henry G. Day, an American employed in the Atlantic Division, residing at Cristobal, died at Colon Hospital on February 16 of chronic nephritis. He was a native of Maryland, 37 years of age, single, and had been on the Isthmus since December 10, 1908. His cousin, John C. Day, lives at 547 Tenth street, Baltimore, Md.

E. H. Allison, an American employed in the transportation service of the Central Division, with residence at Gorgona, died at Ancon Hospital on February 19, after an illness of about six weeks. He was a native of Ohio, aged 50 years, and had been on the Isthmus four and a half years.

Civil Service Examinations.

Examinations are scheduled to be held for the Isthmian Canal Service, as follows: On March 5, for typewriter, and stenographer and typewriter; on March 12, for clerk. The next examinations to be held for typewriter, and for stenographer and typewriter will be about April 30, and for clerk, in October next.

Applications for examination on March 5 will be received only up to March 1, and for the clerk examination, only up to March 7.

All directions in application form and the Manual of Examinations concerning an examination applied for should be carefully followed before forwarding application to this office.

JOHN K. BAXTER,
Secretary, Isthmian Civil Service Board.
Culebra, C. Z., February 17, 1911.

Married.

McGUIGAN-GALE—At the Ancon Catholic chapel, on Wednesday, February 15, 1911, Irene Gale of Vicksburg, Miss., to Joseph J. McGuigan of Wilkes-Barre, Pa., the Rev. Father Daniel Quijano officiating. Canal Zone residence, Ancon.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Bas Obispo, C. Z., on Sunday, February 26, 1911, at 6 p. m. The program, follows:

1 March—*Victorious Phalanx*..............Morse
2 Selection—*The Chocolate Soldier*...........Straus
3 Waltz—*Idle Hours*........................Wood
4 Overture—*Semiramide*....................Rossini
5 Intermezzo—*Silver Bell*..................Wenrich
6 March—*Tannhauser*......................Wagner
7 Medley Selection—*My Southern Rose*..Von Tilzer
8 Selection—*Carmen*..........................Bizet
9 March—*With Sword and Lance*............Starke

CHAS. E. JENNINGS, *Musical Director.*

The next concert will be gien at Gatun on Sunday, March 5, at 2 p. m.

Rainfall from February 1 to 18, 1911, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	.71	15	2.75
Balboa	1.01	11	3.21
*Miraflores	1.30	11	2.41
Pedro Miguel	.78	11	1.37
Rio Grande	.35	11	.88
Central Section—			
Culebra	.37	11	.71
*Camacho	.36	12	.64
Empire	.21	11	.52
Gamboa	.19	12	.68
*Juan Mina	.90	12	1.36
Alhajuela	1.57	12	2.26
*El Vigia	1.13	12	3.11
*Gorgona	.65	6	1.75
San Pablo	.18	12	.64
Tabernilla	.23	**	.81
Bohio	.18	12	1.11
*Monte Lirio	.21	5	1.11
Atlantic Section—			
Gatun	.41	14	1.80
*Brazos Brook	.40	5	1.58
Cristobal	.25	13	1.43
Porto Bello	4.00	12	†6.08
*Nombre de Dios	.84	12	2.58

*Standard rain gage—readings at 5 p. m., daily. Automatic rain gage at unstarred stations—values midnight to midnight.

†To 5 p. m., February 17.

**12th and 14th.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, February 18, 1911. All heights are in feet above mean sea level.

DAY AND DATE	STATION.				
	Vigia.	Alhajuala	Gamboa.	Bohio.	Gatun Lake.
Sun. Feb. 12	145.5	105.5	56.6	15.5	13.4
Mon. Feb. 13	142.9	105.0	58.3	21.1	15.7
Tues. Feb. 14	131.1	96.2	48.6	15.9	15.6
Wed. Feb. 15	130.6	96.2	49.4	16.1	15.5
Thurs. Feb. 16	127.6	93.8	47.5	15.8	15.6
Fri. Feb. 17	127.1	93.6	46.6	15.4	15.3
Sat. Feb. 18	127.4	93.7	46.7	15.2	15.0
Height of low water	125.0	92.0	45.0		

CANAL WORK IN JANUARY.

Monthly Report of the Acting Chairman and Chief Engineer to the Secretary of War.

CULEBRA, C. Z., February 15, 1911.

The Honorable the Secretary of War,
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of January, 1911:

Department of Construction and Engineering.

The following table summarizes the principal items of construction work accomplished by the Atlantic, Central, and Pacific Divisions during the month:

ITEM.	Unit.	Atlantic.	Central.	Pacific.	Total.
Work excavation, dry	Cubic yards	65,889	1,601,107	64,434	1,731,430
Work excavation, wet	Cubic yards	520,181	10,672	469,053	999,906
Total work excavation	Cubic yards	586,070	1,611,779	533,487	2,731,336
Plant excavation, dry	Cubic yards	....	2,583	....	2,583
Plant excavation, wet	Cubic yards	38,251	....	....	38,251
Total plant excavation	Cubic yards	38,251	2,583	....	40,834
Total Canal excavation	Cubic yards	624,321	1,614,362	533,487	2,772,170
Material placed in dams	Cubic yards	430,682	....	113,928	544,610
Concrete laid	Cubic yards	75,429	....	62,531	137,960
Explosives used	Tons (Gross)	66.27	238.78	18.74	323.79
Rock drilled	Feet	79,683	437,798	53,333	570,814
Tracks removed	Miles	....	17.23	....	17.23
New tracks laid	Miles	2.63	25.06	2.29	29.98
Rock crushed	Cubic yards	84,072	456	69,325	153,853
Cement used	Barrels	77,578	78	63,932	141,588
New roads built	Miles	0.03	....	0.99	1.02
Water mains laid	Feet	14,922	4,472	333	19,727
Sewers laid	Feet	1,564	100	96	1,760
Open drains and ditches dug	Feet	8,260	23,662	24,629	56,551
Average daily force	....	8,167	9,041	4,330	21,538
Average rainfall	Inches	1.09	0.19	0.21	0.34

Atlantic Division.

GATUN LOCKS.

Excavation—Shovel excavation during the month was carried on in the lower chamber, and on a hill north of the machine shop. This hill is being excavated in order to furnish impervious material for the back fill south of the intermediate gate of the upper lock. A total of 82,931 cubic yards of material was removed. Of this quantity, 24,678 cubic yards were excavated for back fill. On January 31, the total material removed amounted to 5,660,841 cubic yards, of which 4,904,162 cubic yards had been removed from the Canal prism. The shovel excavation in the locks was 96 per cent completed, and the channel excavation in the lower chamber 65 per cent completed.

Back Fill—Back filling behind the walls of the upper lock was continued, and was commenced behind the west wall of the middle lock. A total of 66,589 cubic yards was placed during January, increasing the total to 260,717 cubic yards. On January 31, the back fill was 21.64 per cent completed.

Receiving and Issuing Material—The receipts of material during the month exceeded the consumption, with the exception of sand, for which the consumption exceeded the receipts by 5,488½ cubic yards.

Mixing and Placing Plants—These plants were kept in satisfactory operation during the month. A second portable mixer was put into operation on the east side of the upper lock, and preparations were made for putting in a third mixer for working on the operating tunnels on the west wall. A fourth portable mixer was placed temporarily in the lower lock for building a strip of floor sufficiently wide for carrying a narrow gage trestle into the lower lock.

Power Plant and Pumps—The operation of the power plant and pumps during the month was satisfactory. The electric pumps were operated during the month by the electrical subdivision for pumping out the Mindi cut.

Iron and Steel Work—During the month, the setting of steel in Stoney gate valves was continued, and the setting of the sills for all gates of the upper lock was completed.

Concrete Work—There was a decrease of 8,293½ cubic yards in the amount of concrete laid, as compared with the figures for the preceding month. The daily average for the 25 working days was 2,916 cubic yards. The total amount of concrete placed during the month was 72,918½ cubic yards, including 4,972¼ cubic yards of large stone. The bucket measurement exceeded the place measurement by 359¼ cubic yards. Of the total concrete, 23,552½ cubic yards were placed in the upper lock, 42,238 cubic yards in the middle lock, and 7,128 cubic yards in the lower lock. The concrete work for the entire lock system was 51.6 per cent completed at the end of January.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS, GATUN LOCKS.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)	12.19	8.50
Average number of hours per day worked per strand of cableway laying concrete and large stone (actual working time)	8.00	....
Average number of mixers per day	6.00	2.00
Average hourly output per mixer, (actual working time) cu. yds.	58.44	60.53
Average amount of concrete and large stone laid per hour, per strand of cableway, (actual working time) cu. yds.	35.93	....
Large rock laid, cu. yds.	4,087¼	885
Concrete laid, cableways, cu. yds.	53,350	....
Concrete laid, derrick, cu. yds.	490	....
Concrete laid, derrick, crane and lift, cu. yds.	....	13,040
Concrete laid, portable mixers	....	1,425.5
Total amount concrete and large rock laid, cu yds.	57,927¼	15,350.5

Concrete from the auxiliary plant is placed by derricks, crane, and a lift. It is, therefore, impracticable to estimate the average amount placed per hour by each of these units.

GATUN DAM.

Construction during the month increased the total fill, as determined by cross sections of the material in place, by 430,682 cubic yards, making the total amount in place 11,763,337 cubic yards.

Hydraulic Fill—The dredges increased the hydraulic fill by 211,992 cubic yards, borrow pit measurement. The total hydraulic fill in place on January 31 was 5,989,227 cubic yards.

Dry Fill—The material received from the Central Division, the locks, the spillway, and the plant excavation, amounting to 218,690 cubic yards, was placed on the north and south toes of the dam, east and west of the spillway, making the total dry fill in place 5,774,110 cubic yards.

GATUN SPILLWAY.

Excavation—The material excavated during the month amounted to 5,636 cubic yards, increasing the total spillway excavation to 1,571,125 cubic yards.

Concrete—Work was continued on the construction piers of the spillway dam across the channel, 2,510 cubic yards of concrete being placed, which increased the total to 115,778 cubic yards.

HARBOR AND CHANNEL SECTION.

Excavation Below Sea Level at Mindi—No material was excavated during the month. The opening made by dredge *No. 86* was closed, and pumping was started on January 15. By January 31, the water surface had been lowered to about elevation minus 34, and two steam shovels were made ready to start work.

Dredging from the Ocean to Mindi—Five dredges removed 346,433 cubic yards of earth and 43,865 cubic yards of rock from the Canal prism. In addition, the dredge *Caribbean* removed 35,054 cubic yards of earth from the channel leading to dock No. 14. The dredge *Mindi* removed 3,197 cubic yards of earth from in front of dock No. 3 at Gatun. On January 31st, 40 feet of water could be carried from zero to zero plus 3,500 feet; 30 feet to mile 5 plus 1,700 feet; 20 feet to mile 5 plus 2,440 feet, at the junction with the French canal.

PORTO BELLO.

PERFORMANCE OF ROCK CRUSHER PLANT.

Length of working days—hours	
From 1st to 15th	12:00
From 16th to 31st	10:00
Average number of hours worked per day	
From 1st to 15th	8:62
From 16th to 31st	7:66
Average number of cubic yards per hour of working day	
From 1st to 15th	284.9
From 16th to 31st	331.9
Average hourly output for possible working time of 263 hours 5 minutes	320
Average number of cubic yards per working hour	
From 1st to 15th	396.4
From 16th to 31st	433.4
Total for month, cubic yards	84,072
Maximum day's output, cubic yards	4,255

SAND, STONE AND CEMENT SERVICE.

In connection with this service, plant steamed 10,535 miles, handled 740 barges, and carried about 2,690 passengers.

TORO POINT.

Colon Breakwater—At Toro Point, 44,941 cubic yards of material were excavated, of which amount 1,788 cubic yards were placed in track fill, and 43,153 cubic yards in breakwater fill. The double track trestle was extended 283.5 linear feet.

NOMBRE DE DIOS.

During the month, 55 barges, containing 28,486 cubic yards of sand, were shipped to Gatun.

MUNICIPAL ENGINEERING.

The reservoirs, water mains, sewers, roads, and oil pipe lines were maintained and extended as required to facilitate construction work. Work was continued on the Colon municipal improvements.

Central Division.

During the month of January, the total amount of material excavated in the Central Division was 1,614,362 cubic yards, of which 456,002 cubic yards were classified as earth, and 1,158,360 cubic yards as rock. Of this quantity, 1,585,406 cubic yards were removed by steam shovels, 2,680 cubic yards by scraper, and 9,452 cubic yards by bucket cranes. Contractors removed 10,672 cubic yards by slucing, and 6,152 cubic yards by hand. Of the total, 1,590,297 cubic yards consisted of primary excavation for the Canal prism, 8,480 cubic yards permanent diversion useful after the Canal is completed, and 13,002 cubic yards of silt deposited in completed sections of prism. The total work excavation amounted to 1,611,779 cubic yards. In addition, 2,583 cubic yards of gravel were excavated outside of the Canal prism for ballast and concrete use.

The daily average number of steam shovels at work during the month was 47.68, and the total number of shovel days was 1,192, as compared with 45 58 shovels at work during the month of December, with 1,185 shovel days.

For comparison with the work done by steam shovels during the corresponding month of the previous year, the following table has been prepared:

Period.	Excavated by shovels.	Classification of material.		Av. No. of shovels at work	W'k'g days.	Av. yards per shovel day.
		Rock.	Earth.			
1910:	Cu. Yds.	Cu. Yds.	Cu. Yds.			C. Y.
Jan.....	1,461,389	1,128,835	332,554	46.68	25	1,252.30
1911:						
Jan.....	1,585,406	1,158,360	427,046	47.68	25	1,330 04

Rainfall at Empire: 1910, .70 ins.; 1911, .02 ins.

The above table shows the average output per shovel to be six per cent greater in January, 1911, than in the corresponding month of the previous year.

The total amount of material excavated from the prism in the Culebra section of the Central Division in January, 1911—1,347,914 cubic yards—was the highest record in that section for the month of January, the previous high record for the month having been in January, 1910, when 1,323,693 cubic yards were removed.

The total estimated amount of material to be removed in the Central Division was 97,125,018 cubic yards, and up to February 1, 1911, 69,404,634 cubic yards had been removed, leaving 28,720,378 cubic yards to be removed in order to complete all excavation in the Central Division. From these figures it will be seen that 71.46 per cent of all excavation in the Central Division had been completed up to the close of the month of January, and 28.54 per cent remained uncompleted.

Considering the two sections which compose the Central Division, the excavation completed and that to be completed at the close of January operations was, as follows:

CULEBRA SECTION.

	Cubic Yards.
Completed....................	58,262,327
To be completed..............	25,924,397

CHAGRES SECTION.

Completed....................	11,142,307
To be completed..............	1,795,987

From the above figures it will be seen that the Culebra section, locally known as Culebra Cut, was 69.22 per cent completed, with 30.78 per cent to be completed; the Chagres section was 86.12 per cent completed, with 13.88 per cent to be completed.

During the month, 9,400 cubic yards of material were hauled from the Canal prism and dumped in the embankment for the roadbed of the relocated Panama railroad in the vicinity of Pedro Miguel. The total amount of spoil from the Central Division used for this purpose at the close of the month was 3,742,574 cubic yards. The Central Division also delivered at Gatun 207,498 cubic yards of rock and earth for use in the construction of the dam, making the total for this purpose at the end of January 2,713 055 cubic yards.

The daily average number of laborers at work on the whole division during the month was 8,137, and the daily average number of gold employes 904.

Pacific Division.

DISTRICT NO. 1—LOCKS AND DAMS.

Excavation—The total excavation during the month amounted to 64,434 cubic yards.

Filling and Embankment—During January, no additional dry filling was added to the prism of the west dam at Pedro Miguel, the total amount of material in place at the close of the month remaining at 260,852 cubic yards, as previously reported. The back fill at Pedro Miguel was increased by 31,072 cubic yards, the total in place at the end of the month amounting to 61,159 cubic yards.

At Miraflores, 24,685 cubic yards were added to the dry fill in the toes, and 89,243 cubic yards to the hydraulic fill in the core of the west dam, making the totals at the end of the month 634,548 cubic yards, and 383,955 cubic yards, respectively. The back fill was increased by 1,060 cubic yards, making the total amount in place at the end of the month 134,605 cubic yards.

PEDRO MIGUEL LOCKS.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT PEDRO MIGUEL.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)...	8.00	8.00
Average number of hours per day, per unit, worked laying concrete and large stone (actual working time)................	5.26	4.11
Average number of mixers per day.........................	2.72	1.60
Average hourly output per mixer (actual working time)........	Cu. Yds. 74.44	Cu. Yds. 37.84
Average amount of concrete and large stone laid per hour, per chamber crane (actual working time)......................	58.62	....
Large rock laid................	32.00	81.00
Concrete laid..................	30,810.00	7,590 00
Total concrete laid..........	30,842.00	7,671.00

*Auxiliary plant consists of three 2-cubic yard mixers, averaging 1.6 daily, and two locomotive cranes and three derricks averaging 2.6 units daily.

The excavation for the center wall in the forebay was completed, and the concrete work commenced. The laying of the tracks for the purpose of back filling the west wall was finished, and the work begun.

Concrete Work—The concrete work at Pedro Miguel for January showed a decrease of 3,871 cubic yards over the figures for December. The total amount placed was 38,513 cubic yards, including 113 cubic yards of large stone. The concrete was placed, as follows: 18,536 cubic yards in the center wall; 8,507 cubic yards in the west wall; 1,298 cubic yards in the west head wall; 9,706 cubic yards in the east wall; and 466 cubic yards in the floor. The dismantling of berm crane "G" for the purpose of moving it to Miraflores was commenced, it not being practicable to use the plant to its full capacity in the future, on account of the placing of the anchorage bolts and other iron work for the gates, together with the castings for the Stoney valves.

MIRAFLORES LOCKS.

Work on the west storage trestle at Miraflores was continued during the month, and the filling of the dike at the Agua Dulce pumping station was commenced.

Excavation—The hydraulic excavation plant was removed from the lower lock site, with the exception of two monitors and a relay pump, which are engaged in cutting out the barrier between the upper and lower lock sites. A steam shovel was employed in excavating an incline into the lower lock site, in order that the rock excavation by steam shovels can be commenced.

Concrete Work—The total amount of concrete and large stone laid was 24,018 cubic yards, as compared with 21,533 cubic yards during December. The concrete was placed, as follows: 7,482 cubic yards in the center wall; 14,611 cubic yards in the east wall; and 1,925 cubic yards in the floor.

OPERATION OF THE PERMANENT ANO AUXILIARY CONCRETE CONSTRUCTION PLANTS AT MIRAFLORES.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)..	8.00	8.00
Average number of bours per day per unit, worked laying concrete and large stone (actual working time).............	7.48	6.18
Average number of mixers per day.........................	....	6.84
Average hourly output per mixer (actual working time)........	Cu. Yds.	Cu. Yds. 21.89
Average amount of concrete and large stone laid per hour per chamber crane (actual working time).....................	....	....
Large rock laid................	203.00	379.00
Concrete laid..................	11,310.00	12,126.00
Total concrete laid..........	11,513.00	12,505.00

Auxiliary plant consists of two 2-yard mixers, five ½-yard mixers, and one ½-yard mixer.

Placing plant consists of one berm crane operating one boom, and mixers dumping directly into forms also locomotive and cars carrying concrete from mixers to berm crane.

DISTRICT NO. 2—DREDGING.

The following is a statement of the output of the five dredges which were in operation during the month, and of the amount of material excavated hydraulically:

Dredge.	Type.	Work.		Plant.		Total.	Remarks.
		Earth.	Rock.	Earth.	Rock.		
		Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	
Cardenas..................	Dipper....	51,777	5,187	1,400	....	58,364	Place measurement
Marmot....................	Ladder....	....	....	186,136	....	186,136	Place measurement
Mole......................	Ladder....	10,123	2,128	....	....	12,251	Place measurement
Badger....................	Ladder....	33,623	24,128	....	....	57,751	Place measurement
Culebra...................	Suction....	252,844	....	....	....	252,844	Scow measurement
Total.....................	....	348,367	31,443	187,536	....	567,346	
Hydraulic excavation.....	....	*89,243	....	....	....	89,243	Place measurement
Grand Total..............	....	437,610	31,443	187,536	....	656,589	

*Excavated from lower lock site at Miraflores.

CHAMÉ SAND EXCAVATION.

Approximately 45,800 cubic yards of sand were excavated at Punta Chamé and delivered at Balboa.

DISTRICT NO. 3—MUNICIPAL AND SANITARY IMPROVEMENTS.

The reservoirs, water mains, sewers, and oil pipe lines were maintained, and work was continued on the municipal improvements in the city of Panama.

DISTRICT NO. 4—ANCON QUARRY.

PERFORMANCE OF ROCK CRUSHER PLANT.

	Hours.
Length of working day	12:00
Average number of hours per day (actual working time)	9:01
	Cu. Yds.
Average amount crushed per hour of working day	231.08
Average amount crushed per working hour	307.79
Total output for the month	69,325.00

An additional force was put to work stripping, which will be continued throughout the dry season, as it is anticipated that during the dry season a sufficient amount of stone may be uncovered to last during the following rainy season. The 12-hour shift was continued during the month, but will probably be discontinued at the end of February, as it is expected that the storage trestles at Miraflores will be sufficiently filled by that time.

Relocation of Panama Railroad.

During the month, 251,793 cubic yards of material were excavated, making the total excavation at the close of the month 5,509,560 cubic yards, and 260,523 cubic yards of material were placed in embankment, making a total of 10,874,131 cubic yards used for this purpose.

For comparison with the work done by steam shovels during the preceding month, and during the corresponding month of the previous year, the following table has been prepared:

Period.	Excavated by Shovels.	Classification of material.		Av. No. of shovels at work.	W'kg days.	Av. yards per shovel day.
		Rock.	Earth.			
1910:	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*			
Dec.	233,720	132,380	101,340	6.00	26	1,498
Jan.	206,334	102,104	104,230	8.24	25	1,002
1911:						
Jan.	251,175	162,390	88,785	6.00	25	1,676

During the month, 965 feet of temporary trestle were driven, and work on bridges and culverts was continued. The amount of permanent 70-pound track was increased during the month by 697 linear feet. At the end of the month, the total 70-pound and 90-pound permanent track amounted to 157,744 linear feet, and 18,997 linear feet, respectively. The total force averaged 1,875 men.

Quartermaster's Department.

Labor—On January 25, the total force employed by the Commission and the Panama Railroad Company was 37,271, an increase of 2,139 over the report for the last week in the previous month. The quarantine reports indicate that immigration has fallen off. Nearly 500 Spanish laborers secured releases from the district quartermaster at Cristobal during the past two months.

Material and Supplies—Effective January 1, 1911, the purchasing, handling and distribution of material for the Panama Railroad Company was transferred to the Commission, a charge of $6,000 per month being made by the Commission for this service. United States requisitions for the Panama railroad will be handled in the same manner as for a construction division of the Commission, and for the Departments of Sanitation and Civil Administration; stock material being issued from the Quartermaster's storehouses, and equipment and special material ordered on requisition through the main office of the Quartermaster's Department. The larger part of the stock now carried by the Panama railroad storehouse at Colon will be transferred to the Mount Hope depot, and the Panama railroad supplied therefrom, or by the local line storehouses of the Quartermaster's Department. Sufficient stock will be retained at the Panama railroad storehouse to meet the requirements of the Cristobal shops only.

During the past six months an investigation was made of the stock of repair parts at the various storehouses, the investigation covering air brake equipment, injectors and lubricators, steam shovel, locomotive, dredge, car and drill parts. Surpluses at the smaller storehouses have been turned in and stocks concentrated at Empire, Gorgona, and Mount Hope. This concentration will result in fewer orders in the future, and, on some classes of equipment, such as air brake parts, lubricators, injectors and their parts, the practical elimination of future orders, the present stock of this material on hand being probably sufficient until the completion of the work.

The total value of material received by the Commission during the month of January was less than during any previous month of the present fiscal year. The total weight of cargo, exclusive of lumber, cross-ties and piling, aggregated 44,549 tons. Yellow pine lumber was delivered in the amount of 1,977,175 feet, B. M., and Douglas fir timber in the amount of 2,051,780 feet, B. M. The value of all material received was $781,211.19.

Subsistence Department.

The operation of the European laborers' messes, the colored laborers' kitchens, and the line hotels showed a net profit of $2,525.93. The operation of the Hotel Tivoli showed a net profit of $2,964.78, and there was a net profit on restaurants and penitentiary of $309.88. The net profit on subsistence operations was $5,800.59. During January, the sum of $1,728.14 was charged against the Hotel Tivoli for renewal and repairs to equipment.

Department of Civil Administration.

COURTS.

One civil case was disposed of in the Supreme Court of the Canal Zone; 11 civil and 42 criminal cases in the Circuit Courts, and 58 civil and 387 criminal cases in the District Courts.

DIVISION OF POSTS, CUSTOMS AND REVENUES.

Money order sales for January amounted to $413,964.14, and the fees to $1,828.06. Receipts from stamp and card sales, and newspaper postage aggregated $6,695.78. The total collection of revenues made by the division was $19,598.70, and the collection on account of court fines, costs, and fees, $2,067.83.

Twenty-five vessels entered at, and 22 vessels cleared from the port of Ancon; and 27 vessels entered at, and 25 vessels cleared from the port of Cristobal.

DIVISION OF POLICE AND PRISONS.

The total number of persons arrested was 384, of whom 355 were men and 29 women. Thirty-eight nationalities were represented.

The total number of arrests for the month is a decrease of 161, as compared with December. Eight convicts were committed to the penitentiary, and 13 were discharged, leaving 144 in confinement at the close of the month. The cost of guarding and subsisting the convicts was $2,274.88, and the value of their work on the Canal Zone roads $2,083.90.

DIVISION OF FIRE PROTECTION.

Forty-four fires were reported in the Canal Zone during the month. This increase was partly due to the advent of the dry season, and the consequent number of small fires occurring along the railroad, traceable to sparks from locomotives. The estimated value of the property involved was: Commission, $194,869.11; Panama railroad, $17,272.35; private property, $1,000; total, $213,141.46. The damage to Commission property was $868.42; Panama railroad, $20; private property, $42; total, $930.42.

DIVISION OF PUBLIC WORKS.

In the city of Panama, the average daily consumption of water was 1,186,922 gallons, and in Colon, 1,008,466 gallons.

The usual inspection and maintenance work of this division was performed during the month.

DIVISION OF SCHOOLS.

The total enrollment in the white schools during the month was 1,048, and the average daily attendance 863.8, or 93 per cent of the enrollment; and in the colored schools the total enrollment was 1,209, and the average daily attendance, 626.6, or 80 per cent. Forty white and 24 colored teachers were employed in the division on January 31.

Department of Sanitation.

The total number of deaths from all causes among employes was 40. These were divided, as follows: From disease, 20, and from violence, 20, giving the general average per thousand of 5.07 and 5.07, respectively.

The annual average death rate per thousand among employes for the month of January in previous years since American occupation was, as follows:

1905	15.40
1906	40.93
1907	25.62
1908	12.72
1909	10.98

The annual average death rate per thousand in the cities of Panama, Colon, and the Canal Zone, including both employes and civil population, was 21.05.

The annual average death rate per thousand for the month of January among the same class of population for previous years was, as follows:

1905	46.50
1906	47.75
1907	35.12
1908	26.66
1909	22.86

Segregating the whites from the blacks, the annual average death rate per thousand from disease among the employes was: For whites, 1.89; blacks, 6.23, giving a general average of 5.07. For the same month during 1909, the annual average death rate per thousand from disease was: Whites, 9.93; blacks, 7.08, giving a general average of 7.89, and for the same month during 1910: Whites, 1.95; blacks, 8.91, giving a general average of 7.21.

Among employes during January, 1911, deaths from the principal diseases were, as follows: Typhoid fever, 1; tuberculosis, 8; chronic nephritis, 3; hæmoglobinuric fever, 2; and lobar pneumonia, 1, leaving a balance of five deaths from all other disesases, and 20 deaths from external violence.

No cases of yellow fever, smallpox, or plague were brought to, or originated on the Isthmus during the month.

Respectfully,
H. F. Hodges,
Acting Chairman and Chief Engineer.

OFFICIAL CIRCULARS.

Washington's Birthday.

Culebra, C. Z., February 15, 1911.

Circular No. 368:

Washington's Birthday, Wednesday, February 22, 1911, will be observed as a holiday in the Canal Zone, and, as far as practicable, all public business will be suspended on that day.

H. F. Hodges,
Acting Chairman.

Employes Warned from Drinking Water Drawn for Locomotives.

Culebra, C. Z., February 16, 1911.

Circular No. 369:

Attention is directed to the fact that the water drawn from the tanks supplying locomotives, especially the one located at Pedro Miguel, is not generally suitable for drinking, and the practice frequently observed of engine and train crews, and men on the dumps, drinking water drawn from locomotive tender tanks should be discontinued.

H. F. Hodges,
Acting Chairman and Chief Engineer.

Repairs to Vessels and Mechanical Equipment.

Culebra, C. Z., February 16, 1911.

Circular No. 343-a:

After March 1, 1911, repairs to all vessels and steamships on the Atlantic coast belonging to the Panama Railroad Company, individuals and companies, and repairs to all mechanical equipment, except hostling of and light running repairs to locmotives and light running repairs to cars, for departments and divisions of the Isthmian Canal Commission, the Panama Railroad Company, and for individuals and companies, in Colon, Cristobal and in the vicinity, will be done by the dry dock shops.

Mechanical work, except repairs to steam shovels, for the Panama railroad relocation will be done by the Mechanical Division.

Paragraph 6 of Circular No. 343 is hereby modified to read, as follows:

All repairs to air pumps, injectors, lubricators, air motors and hammers, angle cocks, triple valves, and air hose, that require machine work or the removal of the article from the equipment, and all except light running repairs to concrete mixers and pumps, and all spare parts and liners therefor, will be made at the Gorgona shops.

H. F. Hodges,
Acting Chairman, Isthmian Canal Commission.
Second Vice-President, Panama Railroad Company.

No Reservations on U. F. Co. Steamers, March 16.

Culebra, C. Z., February 14, 1911.

Heads of Departments and Divisions:

Advice has been received from the agent of the United Fruit Company in Colon to the effect that the entire state room accommodations on steamships *Abangarez* and *Zacapa*, scheduled to sail from Colon to New Orleans and New York, respectively, on March 16, 1911, have been engaged by the American Society of Civil Engineers, in view of which no requests for the reduced rate will be issued from this office for these sailings.

C. A. McIlvaine,
Chief Clerk.

Misdirected Letters.

Ancon, C. Z., February 20, 1911.

The following insufficiently addressed letters originating in the United States and its possessions, have been received in the office of the Director of Posts and may be had upon the request of the addressee:

Barney, Wm.
Catlin, W. R.
Close, J. A.
Coffman, F. Lee
Dorsey, Mrs. W. B.
Dement, G. H.
Dunlap, Miss Jane
Fabey, Michael J.
Finley, G. B.
Galergher, H. J.
Holtz, Al.
Harold, James
Huffman, Ed. W.
Jacks, Mrs. Tamnay
Jenks, Mrs. George
Johnston, Wm. C.
King, L. H. (pkg.)
Klopsch, Louis
Kent, Geo. D.
Knox, B. C.
Love, Mrs. William
Mitchell, N.
Nembhard, Samuel
O'Neil, Thos.
Phipps, R. A. (Pcl)
Rogers, W. W. Harlow
Regan, Wm.
Schirmer, Veit
Simmons, Miss Bessie
Smith, William F.
Stephens, Nathan
Thompson, W. L.
Ward, John A.
Wickel, H. [illegible]
Wilson, Thos. B.
Wilmot, James

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

COROZAL.

Gymnasium work began on Monday, February 13, and classes will meet every Monday and Wednesday evenings at 7.30 o'clock.

On March 3, the Culebra Glee Club will give a concert. Special trains will run from Culebra and Panama.

The Gorgona Dramatic Club will give an entertainment on March 14, and special trains will be run on that night also.

CULEBRA.

The following are the 200, or over, bowling scores for the week ending February 18: Hall, 223; Case, 214, 203; Huttlemeier, 213; Cushing, 208; Mengle, 203; Sickler, 200.

E. C. Howe will give an illustrated lecture on the "Everglades of Florida" on Friday evening, February 24.

The topic for the discussion club for Monday evening, February 27, will be "Social amusements" and "The city."

All players desiring to enter the chess tournament are requested to hand in their names to Mr. Stearns, or Mr. Dubois.

EMPIRE.

The members of the boys' department took a trip to the Mandingo River on Saturday, February 18. This trip was preliminary to the organization of the boy scouts at Empire on Monday, February 27.

The following events will constitute the group for which the physical director announces prizes, and the first series will be run on Thursday evening, February 23: Calisthenics, parallel bars, side horse, horizontal bar (high and low), potato race (8 and 17), standing broad jump, three standing broad jump, mat, rope skip, and relay.

The following high scores in bowling were made during the week: Peterson, 219, 221; Goolsby, 229, 215; Yount, 200.

GORGONA.

The latter part of November, 13 boys passed the "Tenderfoot" test for admittance to the Boy Scouts of America.

"Esmeralda" will be repeated on Friday evening, February 24.

CRISTOBAL.

The standing in the local duckpin bowling tournament is, as follows:

Team.	Played.	Won.	Lost.	Per cent.
Quartermaster's	9	7	2	777
Dry dock	9	4	5	444
Com.-Subsistence	9	4	5	444
Miscellaneous	9	3	6	333

The following matches were played last week:

Dry Dock.			
Claherty	82	78	99
Wheeler	87	82	88
Rosteck	83	70	80
Gibson	70	79	87
Adams	86	89	88
Total	408	398	442

Commissary-Subsistence.			
Herrington	85	70	77
Thompson	78	67	86
DeCora	85	77	85
French	77	83	69
Bullard	95	87	76
Total	420	384	393

Miscellaneous.			
Furlong	78	90	85
Sims	89	101	83
Rabbitt	78	66	81
Grover	76	95	94
Herring	81	89	86
Total	402	441	429

Commissary-Subsistence.			
Herrington	89	74	117
Thompson	71	75	83
DeCora	94	95	97
French	74	68	79
Bullard	86	100	81
Total	414	412	457

Dry Dock.			
Claherty	86	79	89
Wheeler	84	92	91
Rosteck	94	82	89
Gibson	94	70	83
Adams	77	91	89
Total	435	414	441

Quartermaster's.			
Barrett	79	81	97
Jacques	89	85	102
Thompson	90	77	75
Howard	84	94	86
Louch	102	80	82
Total	444	417	442

The "Life problem" club, under the leadership of Judge Brown, will meet for its opening session on Wednesday, March 1, at 8 p. m., instead of Wednesday, February 22.

Mr. Selenkow, formerly of Gorgona, will give an exhibition "Punch and Judy show" at the Cristobal clubhouse on Saturday afternoon at 3.30 for the benefit of the children of Colon and Cristobal.

"Esmeralda," by the Gorgona Dramatic Company, will be produced at Cristobal on Friday, March 3.

GATUN.

In the duckpin handicap tournament each man will roll 30 frames with every other man, and the pinfall, according to difference in averages, will determine the winner. Gold medals are awarded for the highest pinfall, and for the largest number of games won; and silver medals for second number of games won and second pinfall. Two-thirds of the total number of games must be rolled to win a medal. There is no entry fee, but a charge of 10 cents will be made for each 30 frames to pay for the medals.

The Gorgona Dramatic Society will give a play at Gatun on February 27.

The discussion club will study "Problems of society and the home," on Sunday evening, February 26.

The Gatun Debating and Literary Society has elected the following officers: President, C. F. Young; vice-president, R. M. Roudabush; secretary, W. H. Brown; chairman of program committee, L. L. Gilkie. The club will meet every Wednesday night, and at the March meeting the question to be debated will be "The fortification of the Panama Canal." Mr. Brown will lead the discussion in favor, and Mr. Heiskell against. Mr. Young will give a talk on "The Philippines," and musical selections will be given. Any man in Gatun is eligible for membership in the society.

Gold medals have been presented to Mr. Barte and Mr. DeMoll for bowling, and to Mr. Durand for winning the three-cushion billiard match. Edward Atkins of the junior department rolled 258 in tenpins on February 16.

PORTO BELLO.

The following is the standing of the six leaders in the pool and checker tournaments:

Pool Tournament.

Name.	Played.	Won.	Lost.
Wallen	8	8	0
Tuttle	7	6	1
Millar	8	5	3
Beardsley	7	4	3
Hill	6	3	3
Carpenter	3	2	1

Checker Tournament.

Name.	Played.	Won.	Lost.
MacIntosh	10	10	0
Arden	8	7	1
Taylor, T	8	6	2
McDevitt	10	5	5
Tuttle	4	3	1
Taylor, J. B	4	2	2

BASEBALL.

A meeting of the executive committee of the Panama Canal Baseball League was held at Colon on Tuesday, February 21, and as a result, it will recommend to a general meeting of the league called for Wednesday, February 22, the termination of the present league season; the awarding of the pennant to the Commissary-Subsistence team, and the adoption of a new schedule to begin on Sunday, February 26, and to continue until Sunday, May 7, which provides for 12 games, inclusive of one holiday date, that of Good Friday. Inasmuch as the Gorgona and Marine teams have withdrawn from the league, it is probable that only four clubs will be represented, viz., Commissary-Subsistence, Ancon, Empire, and Atlantics.

The protest entered by the Commissary-Subsistence team in the game played with Empire on the Colon grounds on February 12, was sustained and the game has been thrown out. The game to have been played between Gorgona and the Marines at Empire on February 12, and the game scheduled between Empire and the Marines at Empire on February 19, are to treated as postponed games. The game scheduled between the Gorgona team and the Atlantics at Colon park on February 19, was forfeited to the Atlantics on account of the nonappearance of the Gorgona players.

RESULTS OF GAMES, FEBRUARY 19.

At Ancon—Ancon, 1; Commissary-Subsistence, 6.
At Empire—No game—postponed.
At Colon—Forfeited by Gorgona to Atlantics.

STANDING OF CLUBS.

	P.	W.	L.	P.C.		P.	W.	L.	P.C.
Com-Sub.	8	8	0	1,000	Gorgona.	8	3	5	.375
Ancon	9	6	3	.667	Atlantics	9	3	6	.334
Empire	7	4	3	.571	Marines.	7	0	7	.000

SUMMARY OF ANCON-COMMISSARY-SUBSISTENCE GAME.

C.-S.	AB.	H.	PO.	A.	E.
Buch'an, cf.	5	2	1	0	0
Breivogle, lf	5	1	0	0	0
Curtis, 2b	4	1	6	0	0
Mosher, rf., 1b	4	1	4	0	1
Ruth'ford, ss	5	0	1	3	1
Lacey, 3b	4	1	1	0	0
Guptil, 1b	2	0	1	0	0
Meegan, c	2	1	13	1	0
Kellogg, p	3	1	0	3	1
Hodnett, rf.	2	1	0	0	0
Totals	36	9	27	7	3

Ancon.	AB.	H.	PO.	A.	E.
RDren'n, cf.	3	0	4	0	0
LDren'n, rf.	3	0	2	0	0
Tinsley, lf	4	0	1	0	0
Smith, 2b	3	1	1	4	0
Potter, 3b	4	1	2	1	0
Caldwell, c	4	0	10	0	0
James, ss	4	0	0	0	0
Nygren, 1b	3	0	7	0	2
Murray, p	2	0	0	1	0
Totals	30	2	27	6	2

Com.-Subsistence	0	1	0	0	0	0	2	3	0	—6
Ancon	0	0	0	0	0	1	0	0	0	—1

Runs—C.-S.: Rutherford, Lacey, Meegan (2), Kellogg, Hodnett; Ancon: Smith. Runs earned—Ancon, 1; C.-S., 3. Two base hits—Curtis, Kellogg Home run—Smith. Sacrifice hits—Murray, Meegan Sacrifice fly—Mosher. Stolen bases—Curtis, Meegan (2), Kellogg, L. Drennan. Bases on balls—Off Kellogg, 2; off Murray, 3. Struck out—By Kellogg, 13; by Murray, 9. Hit by pitcher—By Kellogg, 2 (R. Drennan, Nygren). Left on bases—C.-S., 9; Ancon, 7. Umpire—Irwin. Time of game—2.00. Scorer—J. K. Munroe.

COMMISSARY DEPARTMENT.

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning February 21.

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	6
Shoulder, neck trimmed off, (4 pounds and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg, (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing, per pound	†10
Shoulder, for roasting (not under 4 pounds), per pound	12½
Chops—Shoulder, per pound	16
Chops, per pound	24
Loin for roastin, per pound	†24
Cutlets, per pound	28
Pork cuts, per pound	*14
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	8
Corned, per pound	12, 14, 16
Chuck roast (3 pounds and over), per pound	12
Pot roast, per pound	12½
Rib roast, second cut (not under 3½ pounds), per pound	16
Rib roast, first cut (not under 3 pounds), per pound	18
Sirloin roast, per pound	19
Rump roast, per pound	19
Porterhouse roast, per pound	20
Steak, Chuck, per pound	12½
Round, per pound	13
Rib, per pound	18
Sirloin, per pound	19
Rump, per pound	19
Porterhouse (not less than 1½ pounds), per pound	20
Tenderloin (Western) per pound	24
Tenderloin (Native), per pound	30

MISCELLANEOUS.

Livers—Beef, per pound	7
Calf, each	60
Half, each	30
Sausage—Pork, per pound	15
Bologna, per pound	10
Frankfurter, per pound	12
Lieberwurst, per pound	10
Sweet bread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	*27
½-dozen, only	*14
Bluefish, fresh, per pound	16
Cod, fresh, per pound	10
Halibut, fresh, per pound	15
Oysters, in 1-quart kegs, keg	50
Oysters in ½-gallon kegs, keg	1.00

POULTRY AND GAME.

Chickens—Fancy roasting, large, each	1.25
medium, each	1.00
Fowls, each	60, 70, 80, 90, 1.00
Ducks, large, each	1.30
medium, each	1.10
Broilers, each	60
Turkeys, per pound	28
Squabs, each	35
Rabbitts, dressed, each	40
Pheasants, each	70, 1.00
Partridges, each	50
Grouse, each	85

CURED AND PICKLED MEATS.

Ham—English York Cut, per pound	30
German, Westphalia, per pound	36
Sugar cured, per pound	18
Sliced, per pound	20
Half, for boiling, per pound	19
Boiled, per pound	25
Hocks, per pound	‡8
Picnic, Winchester, per pound	15
Bacon—Breakfast, whole piece, per pound	23
Breakfast, sliced, per pound	24
Beef, salt, family, per pound	9½
Pork, salt, family, per pound	14
Ox tongues, each	75
Pigs' feet, per pound	9
Tongues, per pound	14
Sliced bacon in 1-pound tins, per tin	30
In 1-pound jars, per jar	30

DAIRY PRODUCTS.

	Price.
Butter—Creamery special, per pound	32
Cheese—Roquefort, per pound	38
Philadelphia Cream, cake	10
Young America, per pound	20
Swiss, per pound	26
Edam, each	1.00
Cheese—Camembert, in large tins, tin	38
Camembert, in small tins, tin	14
Neufchatel, each	6
Gouda, per pound	34
Milk (Inspected or certified), per bottle	**25
(Pasteurized), bottle	**18
Buttermilk, bottle	**15
Ice cream, quart	‡25
½-gallon	‡50

VEGETABLES AND FRUITS.

Beets, per pound	3
Celery, per head	6
Carrots, per pound	3
Cabbage, per pound	3
Cucumbers, per pound	10
Kale, per pound	6
Lettuce, per pound	15
½-pound	8
Onions, per pound	3½
Potatoes, white, per pound	2½
Sweet, per pound	2
Parsnips, per pound	3
Romaine, per pound	14
Squash, per pound	4
Spinach, per pound	10
Turnips, per pound	3
Yams, per pound	3
Apples, per pound	6
Cranberries, per pound	10
Grapefruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12
Tangerines, each	2

*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal and Colon during the week ending February 18, 1911:

Westlands, February 13, from Gulfport, with 53,250 lineal feet piling, untreated, 21,695 lineal feet, piling, creosoted, 14 barrels washers, 24 pieces washers for Atlantic Division; 12 barrels washers for Pacific Division; 125,773 feet, B. M. yellow pine lumber for stock.

Sibiria, February 13, from New York, with 200 barrels carbolic acid for stock.

Colon, February 16, from New York, with 22 cases crusher machinery, 6 pieces crusher machinery, 5 reels wire rope for Atlantic Division; 11 packages concrete machinery, 14 pieces rough castings, 28 cases rough castings for Central Division; 20 barrels fire brick, 6 buoys for Pacific Division; 1,156 pieces castings, 20 bales rubber hose for Mechanical Division; 15 crates ice chests for Sanitary Department; 5 cases butchers' aprons, 20 mounted grindstones, 5 barrels lye, 288 cases caustic soda, 85 kegs iron pipe-fittings, 312 kegs bolts, 10 cases drill machinery for stock; and a miscellaneous cargo, the whole consisting of 2,043 packages, weighing 282 tons.

Abangarez, February 16, from New Orleans, with 7 pieces cable chain for Central Division; 113 pieces castings, 267 crates fire brick for Mechanical Division; 2,411 bales prairie hay, 125 bundles cant hook handles, 197 barrels fire clay for stock.

Almirante, February 16, from New York, with 150 cases paint, 360 pails grease, 120 cases lubricating oil, 140 drums lubricating oil for stock.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending March 1, 1911, (75th meridian time):

DATE.	High.	Low.	High.	Low.	High.
	A. M.	A. M.	A. M.	P. M.	P. M.
February 23	......	5.15	11.25	5.50	11.40
			P. M.		
February 24	......	6.25	12.45	7.00	......
February 25	12.55	7.25	1.45	7.55	......
February 26	1.55	8,15	2.30	8.40	......
February 27	2.40	9.00	3.10	9.20	......
February 28	3.23	9.40	3.45	10.00	......
March 1	4.00	10.18	4.22	10.40	......

The following vessels arrived at and departed from the port of Balboa during the week ending February 18, 1911:

Arrivals—February 12, *Newport*, from San Francisco; February 13, *City of Para*, from San Francisco; February 14, *Ucayali*, from Callao; *Mackinaw*, from San Francisco; February 15, *Huasco*, from Callao; February 17, *Quito*, from Buenaventura and Tumaco.

Departures—February 11, *Pecton*, to Port Harford; February 12, *Manavi*, to Buenaventura; February 13, *Peru*, to Callao; February 14, *Melville Dollar*, to San Francisco; February 16, *Ecuador*, to Guayaquil

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Advance	P. R. R.	Thursday	Feb. 16
Panama	P. R. R.	Thursday	Feb. 23
Allianca	P. R. R.	Wednesday	Mar. 1
Colon	P. R. R.	Tuesday	Mar. 7
Advance	P. R. R.	Monday	Mar. 13
Panama	P. R. R.	Saturday	Mar. 18
Allianca	P. R. R.	Friday	Mar. 24
Colon	P. R. R.	Friday	Mar. 31
Advance	P. R. R.	Thursday	Apr. 6
Panama	P. R. R.	Wednesday	Apr. 12
Allianca	P. R. R.	Tuesday	Apr. 18
Colon	P. R. R.	Monday	Apr. 24
Advance	P. R. R.	Saturday	Apr. 29

CRISTOBAL TO NEW YORK.

Colon	P. R. R.	Wednesday	Feb. 22
Advance	P. R. R.	Tuesday	Feb. 28
Panama	P. R. R.	Tuesday	Mar. 7
Allianca	P. R. R.	Monday	Mar. 13
Colon	P. R. R.	Sunday	Mar. 19
Advance	P. R. R.	Saturday	Mar. 25
Panama	P. R. R.	Friday	Mar. 31
Allianca	P. R. R.	Thursday	Apr. 6
Colon	P. R. R.	Wednesday	Apr. 12
Advance	P. R. R.	Tuesday	Apr. 18
Panama	P. R. R.	Tuesday	Apr. 25
Allianca	P. R. R.	Monday	May 1
Colon	P. R. R.	Saturday	May 6
Advance	P. R. R.	Friday	May 12

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Santa Marta	U. F. C.	Thursday	Feb. 16
Clyde	R. M.	Saturday	Feb. 18
Sarnia	H.-A.	Saturday	Feb. 18
Metapan	U. F. C.	Thursday	Feb. 23
Prinz Joachim	H.-A.	Saturday	Feb. 25
Zacapa	U. F. C.	Thursday	Mar. 2
Thames	R. M.	Saturday	Mar. 4
Sibiria	H.-A.	Saturday	Mar. 4
Almirante	U. F. C.	Thursday	Mar. 9
Trent	R. M.	Saturday	Mar. 18
Oruba	R. M.	Saturday	Apr. 1
Magdalena	R. M.	Saturday	Apr. 15

COLON TO NEW YORK.

Almirante	U. F. C.	Thursday	Feb. 23
Prinz Aug. Wilhelm	H.-A.	Tuesday	Feb. 28
Santa Marta	U. F. C.	Thursday	Mar. 2
Tagus	R. M.	Tuesday	Mar. 7
Metapan	U. F. C.	Thursday	Mar. 9
Zacapa	U. F. C.	Thursday	Mar. 16
Oruba	R. M.	Tuesday	Mar. 21
Magdalena	R. M.	Tuesday	Apr. 4

NEW ORLEANS TO COLON.

Heredia	U. F. C.	Wednesday	Feb. 15
Atenas	U. F. C.	Saturday	Feb. 18
Cartago	U. F. C.	Wednesday	Feb. 22
Turrialba	U. F. C.	Saturday	Feb. 25
Parismina	U. F. C.	Wednesday	Mar. 1
Abangarez	U. F. C.	Saturday	Mar. 4
Heredia	U. F. C.	Wednesday	Mar. 8
Atenas	U. F. C.	Saturday	Mar. 11

COLON TO NEW ORLEANS.

Abangarez	U. F. C.	Thursday	Feb. 23
Heredia	U. F. C.	Thursday	Feb. 23
Atenas	U. F. C.	Thursday	Mar. 2
Cartago	U. F. C.	Thursday	Mar. 2
Turrialba	U. F. C.	Thursday	Mar. 9
Parismina	U. F. C.	Thursday	Mar. 9
Abangarez	U. F. C.	Thursday	Mar. 16
Heredia	U. F. C.	Thursday	Mar. 16

COLON TO BARBADOS, CALLING AT TRINIDAD.

Clyde	R. M.	Tuesday	Feb. 28

The next sailing of the Leyland Line will be as follows: *Antillian* on or about February 27, for New Orleans via Kingston, Ja.

Hamburg-American steamers leave for New York every Tuesday at 10 a. m.; for Jamaica every fortnight, connecting there with steamers for all points in Cuba; for Port Limon every Tuesday, direct, or by way of Bocas del Toro.

Royal Mail steamers leave for New York on alternate Tuesdays at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursday at 3 p. m.; for New Orleans via Port Limon and Puerto Barrios on Thursday at 4 p. m., and for New York on Thursday at 11 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3d and 20th of each month.

CANAL RECORD

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The Canal Record

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THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Cargo Cranes for Balboa Docks.

After a canvass of the bids in the office of the Assistant Chief Engineer, recommendation has been made that the contract for supplying and erecting eight cargo handling cranes on the steel dock at Balboa be awarded to the Cleveland Crane and Engineering Company of Wickliffe, Ohio, for approximately $91,500, the exact price to depend upon minor changes to be made by direction of the Commission. The first crane must be delivered within four months of the award of the contract, and all of them within eight months. The dock is being strengthened, so that it can support a concrete floor, and the eight new cranes which will take the place of ten 1½-ton cranes now installed there.

The new cranes will have a capacity of four tons each, and will be capable of taking general merchandise or lumber from the holds of vessels tied up at the dock and delivering it under cover on the dock. The boom must extend over the ship a distance of 40 feet from the center of the crane tower, and the crane must be capable of lifting a load of four tons a maximum distance of 90 feet at a speed of 300 feet per minute, carrying it along the boom at the rate of 600 feet per minute, and depositing it on the wharf, the whole operation to be completed in one minute. In addition to the cargo handling movement, the cranes will have a movement along the front of the dock at a speed of 100 feet per minute.

Balboa Notes.

The ladder dredge *Marmot*, which has been engaged in excavating the approach channel to the new Panama railroad freight dock at Balboa, has finished all the work it can do there economically for the present, and has been returned to the Canal prism. The suction dredge *Culebra* is being used to clean up the channel.

An old hulk, the *Panama*, a passenger steamer owned by the Pacific Steam Navigation Company, which has been lying at the Flamenco Island anchorage for the past 30 years, or more, used as a machine shop, laundry, and for other purposes, was recently towed to a position near the Union Oil Company's anchorage near Balboa. The change was made partly on account of the shoaling of the water at the former anchorage, and partly for better convenience.

Observation Platform at Culebra.

The erection of an observation platform for tourists, and others, who visit Culebra for the purpose of viewing the Cut, has been authorized. It will occupy a position on the west bank of the Cut almost directly back of the new Church of the Holy Redeemer, about 100 feet distant from the old main line track of the Panama Railroad, and will consist of a plank floor raised about 10 feet from the ground, surrounded by a railing. It will be 8 by 25 feet in size.

Medical Inspection of Schools.

Dr. A. J. Orenstein has been appointed medical inspector for the Canal Zone schools for a period of three months, during which he will devote all his time to a thorough examination of the physical condition of the pupils in the schools for white children.

Following an epidemic of *follicular conjunctivitis* (an inflammation of the outer membrane of the eye) in one of the schools in December, 1908, the district physicians were directed to make a monthly inspection of all the pupils, and good results were immediately noticeable. The work was incidental, however, to the regular work of the district physicians, no apparatus was available for eye and ear tests, and when the district work was heavy, the schools were neglected. Lack of uniformity in results characterized the inspection work, and the children who were backward in their studies, because of physical defects not entirely patent, were given little relief. In order to put the inspection on a thorough and systematic basis, it was placed under one physician on February 1. He had previously made a study of the methods used in the schools of Philadelphia, where a systematic inspection has been in effect since 1904.

New Resolution Enforcing Sanitary Regulations.

Increased powers have been given the health authorities in the city of Panama by resolution No. 19, approved by Governor J. A. Arango on February 3, 1911, which relates to the provisions of decree No. 40 of November 14, 1907, placing in effect the Executive Order of the Canal Zone Government amending Article 5 of the rules and regulations for the installation of water and sewers in the cities of Panama and Colon. The decree provided that in case property owners failed, or refused to make the proper installations upon written order of the Superintendent of Public Works within 30 days after receipt of notice, he might cause the work to be done, in which event, the expense would become a lien on the property, to be collected in the same manner as water rents.

The preamble to the resolution of February 3 sets forth that the provisions of the above decree are not being complied with as their nature requires, and, on this account, some of the districts of the city of Panama are in a condition detrimental to the public health. The resolution provides:

That on and after February 3 no building erected in a place accessible to a sewer and water main shall be occupied until proper connections have been made, and if such connections are not made within 60 days from February 3, the building shall be closed and remain vacant until the proper connections are made.

Freight by Panama Route.

Notice has been served on the Pacific Mail Steamship Company and the California-Atlantic Steamship Company (Bates & Chesebrough) that their traffic agreement with the Panama Railroad Company will be terminated 90 days after January 19. This step is taken, because experience under the new agreement shows that the Panama Railroad Company cannot handle freight, except at a loss, on the basis of 30 per cent of the rate between San Francisco and New York. No agreement, has been reached as to the division to be made after the expiration of the present agreement, but it has been suggested that 40 per cent of the rate would be acceptable to the Panama railroad.

Owing to the activity of the transcontinental railways, and the Hawaiian-American Steamship Company, the freight traffic by way of the Panama route reached such a low stage prior to 1909 that merchants on the Pacific coast demanded a lower rate on eastbound freight. In January, 1909, an agreement was made by which the eastbound rate was fixed at $8 per net ton, and the westbound at $9. The working agreement between the Pacific Mail Company and the Panama Railroad Company called for a division of 50 per cent of the rate to each company, the Pacific Mail Company to pay 80 cents per ton wharfage at Balboa, and 10 cents craneage, when the cranes were used. The Pacific Mail Company served notice that it could not continue under this contract, and on November 15, 1909, a new contract was entered into which fixed a basic rate of $8 per net ton on eastbound, and $9 on westbound cargo; gave the Pacific carrier 70 per cent of the rate, and waived all charges for craneage and wharfage at Balboa, and furnished coal at cost. On October 1, 1910, a similar agreement with the California-Atlantic Steamship Company became effective. The eastbound freight business between Pacific coast ports and Atlantic coast ports of the United States, in the four months ending October 31, increased 5,761 tons over the same period in 1909, when the amount was

NOTES OF PROGRESS.

(Continued.)

30,046 tons, while the receipts from this traffic decreased $7,629.27.

With the beginning of the service by the California-Atlantic Company, the Pacific Mail Company improved its service, and the ships of both lines came into Balboa with all the freight they could carry. The California-Atlantic Company began with three ships on the Pacific side and one on the Atlantic side, and has increased that number to eight ships on the Pacific side and three on the Atlantic. Both companies were notified at the beginning of the agreement that the Panama railroad could not handle more than 30,000 tons a month eastbound cargo on account of the limited handling facilities at Balboa and Cristobal-Colon. The coastwise freight eastbound, handled in the quarter ending January 31, 1909, and 1910, was:

Month.	1909	1910
	Tons.	*Tons.*
November	3,950	12,378
December	2,390	11,015
	1910	1911
January	1,758	10,609
Total	8,098	34,002

Both the handling facilities on the docks, and the freight carrying capacity of the railroad have been taxed by this increased business. The indications all point to a continued increase if the present agreement were to be maintained, because a shipment recently made of oranges and lemons from California to New York as ordinary freight, without cold storage, proved successful, the fruit arriving at its destination in good condition 23 days after leaving California. If fruit can be shipped in this way the possibilities of the trade are unlimited. For such service, the transcontinental railways charge from $28 to $30 per ton, whereas the basic rate of $8 per ton applies by the Panama route.

On November 23, 1910, the Hawaiian-American Steamship Company, which uses the Tehuantepec route, has 17 cargo steamers, with a total tonnage capacity of 170,000 in the Pacific coast, Hawaiian, and Atlantic coast trade, and is the largest line of steamers under the American flag, protested to the President that the rate made by the Panama railroad for Pacific carriers, via the Panama route, was not sufficient to pay actual cost of handling the cargo, and amounted to a discrimination against the Hawaiian-American Company.

Gatun Dam Spillway.

Concrete was placed in the spillway of Gatun Dam during the week ending February 25, as follows:

Date.	Concrete Laid.	Hours worked.	No. Mixers.
February 20	316	17:00	2
February 21	336	14:00	2
February 22	Holiday		
February 23	368	17:00	2
February 24	358	16:00	2
February 25	316	17:00	2
Total	1,694	81:30	2

A committee, consisting of Mr. S. B. Williamson, Lieut.-Col. John L. Phillips, and Mr. J. R. Downes, has been appointed to consider the question of supplementing the present water supply from Rio Grande and Cocoli Lake.

Extradition to Canal Zone.

At the request of the Secretary of War, the Attorney General has rendered an opinion on the applicability of the United States extradition laws to the Canal Zone. The Attorney General is of the opinion, although holding that the matter is one for judicial determination, that none of the laws now in effect in the United States applies to the rendition of fugitives from justice from the Canal Zone. It is recommended that sections 1014 and 5278 of the Revised Statutes be extended by Congressional action to the Canal Zone, as was done in the case of the Philippines.

The sailing date of the *Ancon* from pier No. 11, Cristobal, has been set for Monday, March 6, 1911, at 3 p. m.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

About 55 per cent of the concrete for the system of three twin locks at Gatun has been laid, the exact amount in place at the close of work on February 25, being 1,141,830 cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending February 25, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily. and the auxiliary plant 9 hours.

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
February 20	2,207	37:41	6	428	7:40	2	172½	2,839½
February 21	2,356	38:30	6	464	7:40	2	215	3,077
February 22	Holiday							
February 23	2,578	59:07	6	440	7:40	2	268½	3,360½
February 24	2,606	45:19	6	476	7:40	2	313¼	3,420¾
February 25	2,528	42:26	6	516	8:40	2	240	3,340
*Portable mixers				229½				
Total	12,275	222:23	6	2,553½	38:00	2	1,209¼	16,037¾
Previously reported								1,125,792¼
Grand total								1,141,830

*The 229½ yards shown for the portable mixers are reinforced concrete, and were placed on the following days: February 20th, 32 yards; February 21st, 42 yards; February 23d, 74 yards; February 24th, 25½ yards; February 25th, 56 yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is over 66 per cent completed, 555,827 cubic yards, out of a total of 837,400, having been placed at the close of work on February 25. The record for each of the five 8-hour working days of last week, follows:

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant.						Large stone.	Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete Placed.	Hours worked.	No of mixers.		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
Feb. 20	864	13:33	2	656	15:00	3	28	3:00	1	4	1,552
Feb. 21	1,170	16:00	2	806	18:83	3	26	1:50	1		2,002
Feb. 22	Holiday										
Feb. 23	978	14:00	2	566	14:50	3	26	2:50	1		1,570
Feb. 24	1,016	15:00	2	714	16:50	3	29	2:50	1		1,759
Feb. 25	840	13:00	2	730	17:00	3	23	2:50	1		1,593
Total	4,868	71:33	2	3,472	81:83	3	132	12:00	1	4	8,476
Previously reported										4,174	547,351
Grand total										4,178	555,827

MIRAFLORES LOCKS.

Over 10 per cent of the concrete for the system of locks at Miraflores was in place on February 25, the total amount on that date being 140,162 cubic yards, out of a total of approximately 1,362,000. The record for each of the five 8-hour working days of last week, follows:

Date.	Auxiliary Plant.										Total.
	2-cubic yard mixers.			½-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
Feb. 20	468	8:67	2	499	31:00	5	85	7:50	1	60	1,112
Feb. 21	320	4:67	2	559	35:50	5	82	7:50	1	42	1,003
Feb. 22	Holiday										
Feb. 23	406	8:50	2	564	28:50	5	65	6:00	1	12	1,047
Feb. 24	436	8:50	2	549	30:50	5	81	6:50	1	38	1,104
Feb. 25	482	9:33	2	605	33:00	5	78	6:50	1	47	1,212
Total	2,112	39:67	2	2,776	158:50	5	391	34:00	1	199	5,478
Previously reported										3,198	134,684
Grand total										3,397	140,162

SOCIAL LIFE OF THE ZONE.

Women's Clubs.

The annual meeting of the Canal Zone Federation of Women's Clubs will be held in Gatun on Friday, April 21. It will mark the close of the fourth year of club work among the women in the Canal Zone.

A meeting of the art and literature department of the Cristobal Woman's Club was held on Thursday, February 23, the program consisting of papers on the chateaus of France. At the March meeting of the department there will be papers on the Napoleonic period, and the year's study on French art and history will conclude on April 30, with papers on the French Republic and its presidents.

The program of the Gatun Woman's Club on Friday, February 17, was in charge of the literature department. Papers on Washington and Lincoln were read by the members. The monthly business meeting was held on Friday, February 24.

The meetings of the Gorgona Woman's Club are held at the homes of the members. Papers on various topics are discussed. Beginning March 22, the club will hold a three days' exhibit of the Federation pictures, and at the meeting on March 23, a paper on art will be read.

At its meeting on March 8, the Paraiso Woman's Club will have as guest of honor, the president of the Canal Zone Federation. Mrs. C. G. Hennigh has been appointed chairman of the current events committee. A dance will be given toward the end of March.

The Gatun Sunshine Society held a tea and sale at the clubhouse the first week in February for the benefit of the Blind Babies' Home in New York, the institution in which the society is interested.

Church Notes.

One hundred and ten dollars was made at the entertainment given at Ancon hall by the Ladies' Aid Society of the Methodist Episcopal Church on February 21. The society will maintain two scholarships in the Methodist College in Panama, and will complete the interior decorations of the church.

At the election of officers for the Altar Society of St. Ferdinand's Church, Empire, held on February 21, Mrs. L. Ergenzinger was chosen president, Mrs. H. I. McGillicuddy vice-president, and Mrs. J. H. Westberg secretary.

During Lent, the meetings of the Woman's Guild of St. Luke's Church, Ancon, will be held in the Tivoli Hotel every Tuesday morning at 9.30 o'clock. Business meetings will be held on the first and third Tuesdays, and the alternate meetings will be for sewing. The chaplain will give an informal course of instruction on the doctrines, forms, and ceremonies of the church. No afternoon meetings will be held during the six weeks between March 1 and April 16.

Red Cross Ball.

The first annual ball of the Canal Zone Branch of the American National Red Cross Society was held at the Hotel Tivoli on February 18. Tickets were sold at $1.50 each to nonmembers, entitling the holders to admission to the ball and membership until November 1, 1911. To members, tickets were sold for 50 cents each. Seven hundred and sixty-eight new members were added to the local organization, making a total membership of about 1,000; and about $1,116 have been added to the treasury, of which sum about $384 will be sent to the treasurer of the national organization at Washington, D. C.

Through the courtesy of the Isthmian Canal Commission, the Hotel Tivoli, and the services of the Commission Band were made available; the Marine Band played by courtesy of the command at Camp Elliott; and special trains were furnished by the Panama Railroad Company.

The officers of the local organization wish to thank all committees and individuals who assisted in making the ball a success.

PERSONAL.

Colonel Geo. W. Goethals sailed from New Orleans on Saturday, and is due to arrive at Colon on March 2. During his visit to the United States, in addition to speaking before both houses of Congress, Justices of the Supreme Court, members of the Cabinet, and invited guests in the hall of the House of Representatives at Washington, Colonel Goethals gave illustrated addresses, or lectures. before the National Geographic Society of Washington; the Geographic Society of Philadelphia, at whose annual dinner he was the guest of honor; the University of Pennsylvania; the Engineers' Club of Philadelphia; the University of Virginia; the Ohio State University at Columbus, Ohio, and at New Orleans on the evening before he sailed. He was compelled, through lack of time, to decline invitations to deliver addresses before the Military Academy at West Point, the City Club of Boston, and the Western Reserve University at Cleveland, Ohio. He was also invited to visit San Francisco and deliver an address there.

Associate Justice Wesley M. Owen, accompanied by his family, sailed for the States on the *Advance* on February 28. On the expiration of his leave of absence his resignation as a justice of the Canal Zone Supreme Court will become effective. His residence will be at Le Roy, Ill.

Mr. T. B. Monniche, accompanied by Mrs. Monniche, sailed for the States on February 28, on the *Advance*, to be present in Washington to give information to bidders on the materials for the emergency dams.

Visit of Congressmen.

A large party of Congressmen, with their friends, will visit the Canal work immediately after the adjournment of Congress on March 3. They will spend about a week on the Isthmus, returning to New York on the *Colon*, which sails from Cristobal on March 19.

Case of Matthew H. Lough.

The Supreme Court handed down a decision on February 21, confirming the decision of the District Court, which found Matthew H. Lough guilty of involuntary manslaughter, and sentenced him to serve one year in Culebra penitentiary. On the night of August 15, 1910, Lough was engineer of locomotive No. 657, hauling a special freight train on the Panama railroad. At Bohio, his train ran into the rear end of another special freight, and the conductor, Elias C. Tinsley, was killed. Lough was charged with involuntary manslaughter, and was tried at Cristobal on September 15 and 16, before Justice Lorin C. Collins, who found that he had been criminally negligent in not heeding a double torpedo signal to slow down. Lough began serving his sentence at the penitentiary immediately after the Supreme Court made its decision. A number of employes, among them fellow transportation men, have signed a petition which will be presented to the Chairman on his return from the States, asking that Lough be pardoned.

Spanish War Veterans.

A camp of Spanish War Veterans is to be instituted at Gatun, in the lodge hall, on Sunday, March 5, at 2 p. m.

A large delegation of veterans have signified their intention of joining this movement, and those who have not done so, are requested to be present at that time, or communicate with CHARLES C. CAMERON.

Culebra, C. Z. February 24, 1911.

The first meeting of the United Spanish-American War Veterans was held in the Gatun lodge hall last Sunday. A temporary camp was established and temporary officers elected to arrange for the coming of the Commander-in-Chief, Col. Jacoby, who will install a permanent camp. The next meeting will be held in Gatun lodge hall on Sunday, March 5. All Spanish-American war veterans are invited to be present, bringing their credentials.

A. O. LUDWIG,
Temporary Adjutant.

Gatun, C. Z. February 26, 1911.

Porto Bello Crusher.

A statement of the work done at the Porto Bello crusher, by days, for the week ending February 25, follows:

DATE.	Hours worked.	Cubic Yards.
February 20	6:48	2,982
February 21	7:12	3,140
February 22	Holiday	....
February 23	7:09	3,301
February 24	7:44	3,380
February 25	7:49	3,389
Total	36:42	16,192

Ancon Crusher.

A statement of the rock crushed at Ancon quarry during the two weeks ending February 25, follows:

DATE.	Hours worked.	Cubic Yards.
February 13	8:00	2,211
February 14	8:05	2,503
February 15	9:05	2,567
February 16	9:10	2,132
February 17	9:35	3,057
February 18	9:05	2,528
Total	53:00	14,998

DATE.	Hours worked.	Cubic Yards.
February 20	9;00	2,818
February 21	8:25	2,718
February 22	Holiday	....
February 23	8:00	2,076
February 24	8:25	3,066
February 25	8:25	2,337
Total	42:15	13,015

Obituary.

Mrs. Lavinia Strobridge, wife of F. C. Strobridge, an employe of the Panama Railroad Company at Colon, died at Colon Hospital on February 25. She was 45 years of age, was born in Shelbyville, Ky., and had been on the Isthmus three and one-half years.

EXECUTIVE ORDER

To Provide a Method of Executing and Recording Deeds, and to Repeal the Executive Order Dated March 12, 1907, Effective April 15, 1907, Relating to the Same Subject.

Article 1. No conveyance of immovable property or of an interest therein, or a mortgage thereon, shall be effective, except by an instrument in writing, executed and delivered between parties competent to contract, and sufficiently describing the property conveyed, or mortgaged, and signed by the person executing the same, or if he is not able to write he shall affix his mark thereto, —and duly acknowledge in accordance with the provisions of this Order, before some officer authorized to take acknowledgments, provided, however, that a copy of any instrument in writing, affecting immovable property in the Canal Zone, duly executed before a Notary Public in the Republic of Colombia prior to November 3, 1903, or in the Republic of Panama after said date, and authenticated by the Notary Public charged with the custody of the protocol containing the original deed from which the copy was taken, shall be valid and effective as a conveyance of the lands or interests in the lands therein described.

Article 2. The acknowledgments provided for in this Order shall be made in the manner and form provided for the husband's acknowledgment in the Executive Order of August 20, 1910, entitled "Executive Order.—Conveyance of Real Estate by Married Women."

Article 3. If for any reason the grantor in the instrument cannot appear before the officer authorized to take acknowledgments, the execution of such instrument must be attested by not less than two subscribing witnesses, and may be proven by the oath of one of the subscribing witnesses to such instrument, taken before any of the officers authorized to take acknowledgments, to the effect that he subscribed such instrument as a witness at the request of the grantor, who signed the same in his presence, or who acknowledged to him that he had signed the same, for the purposes and consideration therein expressed.

The certificate of acknowledgment shall be sufficient if it is substantially in the following form:

The.....................Judicial Circuit
Canal Zone.

Before me...
.................., in and for.........................,
in the Canal Zone, on this day personally appeared
....
known to me (or proven to me on the oath of.........
.................., a credible witness,) to be the person whose name is subscribed as a witness to the foregoing instrument, and after being duly sworn by me, on his oath deposes that he subscribed the same as such witness at the request of..............................,
the grantor named in the foregoing instrument, and that be saw the grantor execute the same (or that the grantor acknowledged to him that he had executed the same, as the case may be,) for the purposes and consideration therein expressed.

Given under my hand and seal of office this........
.... day of....................A. D. ......
....
....

Article 4. The officers authorized to take acknowledgments under this Order shall issue proper certificates of all acknowledgments taken or proven before them.

Article 5. The Clerk of the Circuit Court of the First Judicial Circuit of the Canal Zone shall be, *ex officio*, Registrar of Property of the Canal Zone, and it shall be his duty to record all instruments authorized to be recorded by this Order, or any other law or order of the Canal Zone, and presented to him for record, in a well bound book or books kept by him for that purpose, and he shall attach a certificate to each deed so recorded by him, which certificate shall state the date and hour of the filing of the instrument for record, as well as the book and page or pages of the record upon which the same is recorded; and shall be signed by him under his official title, and shall be impressed with his seal. The seal of the Registrar shall contain the words "Registrar of Property of the Canal Zone."

He shall keep an index, direct and cross, of the instruments recorded by him, which shall show the names of the grantor and grantee of each instrument recorded by him, and the date of the filing of the same, and the book and page or pages in which it is recorded.

Article 6. It shall be the duty of the Registrar of Property to keep a file docket wherein he shall note the filing of all instruments when presented to him for record, which docket shall contain the names of the parties to the instrument, the date of the same, and the date and hour of its filing in the Registrar's office; and all instruments shall be deemed to have been recorded from the time of such filing.

Article 7. No instrument in writing shall be admitted to record in the Registrar's office, except such as are acknowledged or authenticated in the manner provided for in this Order.

Article 8. The instruments described in Article 1 of this Order, and executed in conformity therewith, as well as the instruments described in the Executive Order of August 20, 1910, entitled "Executive Order.—Conveyance of Real Estate by Married Women," and executed in accordance therewith, shall be admitted to record in the Registrar's office.

Article 9. A copy of any notarial deed relating to property in the Canal Zone, taken from the records in the office of the Registrar of Property of Panama, or Colon, Republic of Panama, and recorded therein prior to February 26, 1904, and duly certified by the Registrar issuing the same, shall be recorded in the office of the Registrar of Property of the Canal Zone, in like manner as provided for deeds executed in the Canal Zone.

Article 10. In all cases in which Spanish documents are admitted to registration under the provisions of this Order, such documents shall be accompanied by English translations which shall be recorded with them.

Article 11. A copy of any final judgment or decree of a court of competent jurisdiction of the Canal Zone, vesting the title to immovable property, or any interest therein, in one or more of the parties to said judgment or decree, and duly certified by the clerk of the court in which the judgment or decree was rendered, as being a true copy of such judgment or decree as the same appears in the records of the court, shall be admitted to record in the Registrar's office in like manner as provided herein for deeds executed in the Canal Zone.

Article 12. A copy of a judgment or decree of a court of competent jurisdiction of the Republic of Panama, affecting immovable property situated in the Canal Zone, rendered prior to the 26th day of February, 1904, and duly certified by the clerk, or secretary, of the court rendering such judgment or decree, and by the judge thereof, when the signature of the said judge is authenticated by the Secretary of Foreign Relations of Panama, shall in like manner be admitted in the Registrar's office under the provisions of this Order.

Article 13. No deed or other instrument in writing affecting immovable property shall be valid against subsequent creditors of, or *bona fide* purchasers for value, without notice, from the owner of such property, unless the same shall have been recorded with the Registrar of Property of the Canal Zone.

Article 14. The Registrars' offices at Empire and Cristobal shall be discontinued on and after the date on which this Order goes into effect, and the books and records of immovable property in those offices shall be transferred to the Registrar's office hereby created, and shall become a part of the records of his office; and after this Order takes effect all deeds, or other instruments, required to be recorded by the provisions of this Order, or any other law or order of the Canal Zone, shall be recorded in the office of the Registrar herein provided for.

Article 15. The Registrar of Property shall be entitled to charge for his services rendered as Registrar, the following fees, United States currency:

For each instrument recorded, including his certificate thereto, ten cents per folio of one hundred words, but no charge shall be less than 50 cents for any one instrument.

For each certified copy issued by him of an instrument recorded in his office, including certificate thereto, 10 cents per folio of 100 words, but no charge shall be less than 50 cents for each copy thereof.

For searching his records and giving a certificate thereto of any fact or facts contained in his records, 50 cents for each certificate, provided that where more than one record book is searched, he may charge 25 cents for each additional book.

The fees so collected by the Registrar of Property shall be turned in by him to the Canal Zone Treasury.

Article 16. Any instrument in writing mentioned in Article 1 of this Order and duly acknowledged or authenticated in the manner therein described, and any deed or other instrument executed and acknowledged in accordance with the provisions of said Order of August 20, 1910, relating to conveyances by married women, may be used in evidence on the trial of any action or special proceedings without the necessity of proof of its execution unless such instrument is attacked for forgery by the affidavit of the adverse parties, provided, however, that such instrument shall not be admissible in evidence without proof of its execution unless the same or a copy thereof be filed with the clerk of the court wherein such action or special proceeding is pending, and due notice is given to the opposite party, or his attorney, at least three days before the trial of such action or special proceeding.

Article 17. A copy of any instrument duly recorded under the provisions of this Order and certified to by the Registrar in charge of the record, may be used in evidence in any judicial proceedings in like manner and effect as might be done with the original if produced, provided such certified copy is filed with the clerk of the court wherein the action or proceeding is pending, and due notice of the filing of such copy is given to the adverse party, or his attorney, at least three days before the trial or proceedings in which the said copy is to be produced in evidence.

Article 18. All orders or decrees and parts thereof in conflict with this Order are hereby repealed, and the Executive Order of March 12, 1907, effective April 15, 1907, relating to the execution and recording of deeds is also hereby repealed, provided, however, that this order shall not affect a deed or other instrument relating to immovable property executed pursuant to the said Order of March 12, 1907, prior to the date on which this Order shall take effect, and provided further that this Order shall not be construed to modify in any manner the Executive Order of August 20, 1910, relating to the conveyance of real estate by married women.

Article 19. This Order shall take effect 60 days from its date. Wm. H. Taft.

The White House,
February 2, 1911.
[No. 1295.]

Band Concert.

A concert will be given by the Isthmian Canal Commission band at Gatun, C. Z., on Sunday, March 5, 1911, at 2 p. m. The program follows:

1. March—*Midshipman*...............Laurendeau
2. Waltz—*The Lion and the Mouse*..........Bendix
3. Intermezzo—*Bridal Song from the Rural Wedding*.. Goldmark
4. Overture—*Semiramide*..................Rossini
5. Rag—*Wild Cherries*....................Snyder
6. Medley Selection—*The Sunny South*......Lampe
7. Serenade—*La Paloma*..................Xradier
8. Selection—*The Golden Girl*.............Howard
9. March—*Tannhauser*....................Wagner

Chas. E. Jennings, *Musical Director.*

The next concert will be given at Hotel Tivoli, Ancon, March 12, at 7.30 p. m.

LABOR FORCE IN JANUARY.

On January 25, there were 37,271 employes actually at work on the Canal and the Panama railroad, and of that number, 29,842 were Canal employes. The gold force on the Canal work, composed almost entirely of white Americans, was 4,875. The total force is, as follows:

DEPARTMENT	SILVER EMPLOYES.*															Total Gold.	Grand Total.
		Artisans.					European Laborers.		West Indian Laborers.					Total Silver.			
	Monthly.	44 cents.	32 cents.	25 cents.	20 cents.	16 cents.	20 cents.	16 cents	20 cents.	16 cents.	13 cents.	10 cents.	7 cents.				
Const'ct'n and Eng'r'ng.	4,503	16	20	248	657	2,748	3,282	1,273	118	617	3,555	3,445	274	20,756		3,699	24,455
Civil Administration....	189			2	4	16						4		215		362	577
Sanitation........	672			4	2	2	1	1			6	324	9	1,021		392	1,413
Quartermaster's.........	1,006		4	68	156	81	160	26	9		15	781	10	2,316		234	2,550
Subsistence.............	645			1	1									647		56	703
Disbursements...........	7													7		26	33
Examinat'n of Accounts.	5													5		106	111
Total..................	7,027	16	24	323	820	2,847	3,443	1,300	127	617	3,576	4,554	293	24 967		4,875	29,842

Panama railroad force, 4,277; Panama railroad relocation force 2,094; Panama railroad commissary force, 1,058. Total, 7,429. I. C. C. force, 29,842. Grand total, 37 271.

*All wages specified are in gold.

PANAMA RAILROAD EARNINGS.

Traffic Operations of Both Railroad and Steamship Lines for Fiscal Year 1910.

The total earnings of the Panama Railroad Company, and the Panama Railroad Steamship Company, for the fiscal year ending June 30, 1910, according to the sixty-first annual report of the board of directors, recently issued, amounted to $6,100,788.83, as compared with $5,715,517.16 for the fiscal year 1909, an increase of $385,271.67. The operating expenses aggregated $4,358,426.92, as compared with $3,699,678.60 in 1909, an increase of $658,748.32, making a decrease in the earnings over operating expenses of $273,476.65. The net income for the twelvemonth was $1,254,777.80, as compared with $1,522,780.45 for the preceding period.

The total railroad earnings in 1910 were $4,224,062.28, as compared with $4,267,161.85 in 1909, a decrease of $43,099.57, or 1.01 per cent. The earnings of the railroad for the transportation of all kinds of traffic show the following decreases: Through commercial freight, $63,290.70, or 4.93 per cent; local Isthmian Canal Commission freight, $173,914.64, or 19.16 per cent, a total decrease of $237,205.34, or 10.82 per cent. The passenger earnings, including mails, baggage, treasure and express, increased $69,975.76, or 7.86 per cent; local commercial freight, $38,619.29, or 10.19 per cent; and miscellaneous earnings $85,510.72, or 10.61 per cent, a total increase of $194,105.77, or 9.35 per cent, making a net decrease in traffic earnings of $43,099.57, or 1.01 per cent, as compared with a net decrease for the previous year of $274,275.94, or 6.04 per cent.

The freight traffic from New York and gulf ports to South Pacific ports showed an increase of 795 tons; to San Francisco, 8,299 tons, and to Panama 11,893 tons; while to Central America and Mexico, there was a decrease of 2,056 tons. From Europe, freight shipments to South Pacific ports decreased 3,033 tons; to Central America and Mexico, 8,966 tons, and to San Francisco, 2,548 tons; while to Panama, there was an increase of 6,143 tons. To Europe, shipments from South Pacific ports decreased 5,115 tons; from Central America and Mexico, 20,787 tons; from San Francisco, 50 tons, and from Panama, seven tons. To New York and gulf ports, shipments from Central America and Mexico decreased 6,065 tons, but increased 4,444 tons from South Pacific ports; 24,754 tons from San Francisco, and 294 tons from Panama.

The freight carried over the railroad during the fiscal year 1910, including that of the railroad company, aggregated 1,272,217 tons of 2,000 pounds, or 40 cubic feet each, as compared with 1,160,304 tons during the preceding year, an increase of 9.65 per cent. The gross earnings per ton in 1910 averaged $1.92, as against $2.30 in 1909, a decrease of 16.52 per cent. The total revenue freight traffic over the road in 1910, including both merchandise and coal, was 1,238,381 tons, an increase of 118,200 tons, or 10.55 per cent, over 1909. The revenue therefrom was $2,372,571.94, a decrease from 1909, of $198,586.05, or 7.72 per cent. In addition to the above, 33,836 tons of company freight, 3,171 tons of mail and excess baggage, and 2,568 tons of express were carried, the amount of mail and baggage transported showing an increase of 271 tons, over 1909. The southbound freight tonnage was 77.96 per cent of the total, as compared with 72.29 per cent in 1909. The through freight traffic was 30.60 per cent of the total, as against 32.86 per cent the previous year. Coal, including that of the company, comprised 57.37 per cent of the southbound traffic, an increase of 4.74 per cent, over 1909.

A total of 627,397 first class passengers was carried in 1910, as compared with 555,908 in 1909, an increase of 12.86 per cent, and 479,586 in 1908. The number of second class passengers transported was 1,600,172, as compared with 1,328,390 in 1909, a gain of 20.46 per cent, and 906,059 in 1908. The total increase in passengers carried amounted to 343,271, or 18.22 per cent. The passenger earnings increased from $669,933.54 in 1909, to $739,757.58 in 1910, or 10.42 per cent. The revenue from through passengers showed an increase of $6,494.72, or 26.21 per cent, and the number of such passengers, an increase of 884, or 14.43 per cent. Local passengers showed an increase of $63,329.32, or 9.82 per cent, in revenue, and 342,387, or 18.23 per cent, in the number carried.

The total earnings of the company's steamship line were $1,876,726.55 in 1910, an increase of $428,371.24, or 29.58 per cent, over 1909. The operating expenses increased from $1,335,848.13 in 1909, to $1,708,774.30 in 1910, or 27.92 per cent. Freight traffic increased 205,934 tons, or 93.77 per cent, and the revenue therefrom increased $410,296.45, or 48.36 per cent. The number of passengers carried increased 2,091, or 14.40 per cent, and there was an increase in earnings from this source of $5,270.49, or 1.45 per cent. The total increase from carrying the mails amounted to $7,400.70. Total mail revenue 1910—$218,098.04. Of the total tonnage transported, 96,279 tons were carried by the company's steamers, and 329,280 tons by chartered vessels.

Empire Athletic Meet.

An athletic meet was held at Empire on February 22, under the direction of the Y. M. C. A. in which 72 men and 21 boys were entered. The results in the sixteen events were, as follows:

100-yard dash—1st, W. J. Earle, Gorgona; 2d, J. K. Munroe, Ancon; 3d, G. B. Fitts, Gorgona. Time 11 2-5 seconds. In the second heat of this event, G. B. Fitts of Gorgona, made the dash in 10 2-5 seconds, lowering the Isthmian record 3-5 of a second.

Shot put—1st, C. O. Herring, Gorgona, distance 47 feet 3 inches; 2d, G. Shaffer, Empire, distance, 40 feet 3 inches; 3d, H. D. Myers, Gorgona, distance, 37 feet 11 inches. Herring established a new record for the Isthmus.

Running high jump—R. T. Clark, U. S. Marine Corps, and H. D. Myers, Gorgona, tied for first place at 5 feet 2 inches. On the jump-off R. T. Clark won first medal, and H. D. Meyers second; the points were divided equally between the two teams; 3rd, R. Koperski, Empire, distance 4 feet 10 inches.

220-yard dash—1st, G. B. Fitts, Gorgona; 2d, H. K. Allard, Ancon; 3d, W. L. Kenealy, Ancon. Time 26 2-5 seconds.

Hammer throw—1st, J. E. Carpenter, Porto Bello, distance 131 feet 1 inch; 2d, Geo. Shaffer, Empire, distance, 130 feet 1½ inches; 3d, C. O. Herring, Gorgona, distance, 95 feet 10 inches.

120-yard low hurdles—1st, H. G. Hallock, Gatun; 2d, H. D. Myers, Gorgona; 3d. W. J. Earle, Gorgona. Time, 16 2-5 seconds, lowering the previous Isthmian record 1 3-5 seconds.

Running broad jump—1st, C. O. Herring, Gorgona, distance 19 feet 7 inches; 2d, H. LaCroix, Cristobal, distance, 18 feet 3 inches; 3d, R. Koperski, Empire, distance, 17 feet 7½ inches.

100-yard dash (boys)—1st, H. Panai, Cristobal; 2d, Thomas Guderian, Cristobal; 3d, Guy Morrison, Cristobal. Time, 12 4-5 seconds.

440-yard dash—1st, H. K. Allard, Ancon; 2d, D. T. Ellsworth, Gorgona; 3d, H. W. Ottman, Gatun. Time, 1 minute 2 seconds.

Pole vault—1st, J. G. DeCora, Cristobal, distance, 9 feet 6 inches; 2d, J. T. Luttrell, Empire, distance, 9 feet 3 inches; 3d, H. D. Myers, Gorgona, distance, 9 feet. DeCora beat the Isthmian record by 2 inches.

Relay race (boys) ⅔ of a mile, 6-lap track—1st, Cristobal (Morrison, Gibson, Guderian, Panai); 2d, Gatun; 3d, Empire; 4th, Culebra. Time, 2 minutes 58 seconds.

One mile run—1st, Carl Sherberger, Ancon; 2d, A. A. Simka, Gorgona; 3d, C. J. Mengel. Time, 5 minutes 19 2-5 seconds.

Two mile walk—1st, R. K. Knox, Gorgona; 2d, G. K. Weston, Cristobal; 3d, I. N. DeLong, Cristobal. Time, 21 minutes 48 4-5 seconds.

Relay race (men) ⅔ of a mile, 6-lap track—1st, Cristobal (Starbuck, LaCroix, Koperski, DeCora); 2d, Ancon; 3d, Gorgona; 4th, Camp Elliott; 5th, Gatun. Time, 2 minutes 35 3-5 seconds.

The teams represented scored the following number of points: Gorgona Y. M. C. A., 43; Ancon Athletic Club, 17; Cristobal Y. M. C. A., 17; Empire Y. M. C. A., 11; Gatun Y. M. C. A., 6; Porto Bello Y. M. C. A., 5; U. S. Marines, Camp Elliott, 4; Culebra Y. M. C. A., 1.

Gatun Fire Department Tournament.

A fire department tournament was held by the three volunteer companies at Gatun on the morning of February 22. The results in the four events, which were fully described in THE CANAL RECORD of February 15, were, as follows:

1. One hundred and fifty-yard hose race—No. 3 company, Gatun spillway, first, time 43 seconds; No. 2 company, cement shed, second, time 53½ seconds; No. 1 company, Gatun, third, time 58 seconds.
2. Coupling contest, laying parallel four 50-foot lengths of hose—No. 1 company, first, time 22¼ seconds; No. 2 company, second, time 24½ seconds. No. 3 company, third, time 24½ seconds. The contest between the last two companies resulted in a tie for second place.
3. Removing section of hose from charged line—No. 1 company, first, time 20¼ seconds; No. 3 company, second, time 21¼ seconds; No. 2 company, third, time, 22½ seconds.
4. One man coupling contest—No. 3 company, first, time 9 seconds; No. 2 company, second, time 10¼ seconds; No. 1 company, third, time 10½ seconds.

No. 3 company won the series with 57 points. No. 1 company was second with 43 points. The winning company was awarded an American flag, 5 by 8 feet, as a prize, and will be entertained at a banquet by the other two companies at the Gatun hotel on Saturday night, March 4.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

The Caveny Company from the States will give an entertainment at the clubhouses during March, consisting of vocal and instrumental music, impersonations, and cartoon and clay modeling work. The dates are, as follows: Culebra, March 2; Gorgona, March 3; Gatun, March 6; Empire, March 7; Corozal, March 9.

COROZAL.

Gymnasium classes are meeting every Monday and Wednesday evenings. All men interested in work of this nature are invited to join the classes.

A Spanish class has been arranged for, and any one interested may hand his name to the secretary. A preliminary meeting for the arrangement of the class, and time of meeting, will be held during this week.

The Culebra Glee Club will give an entertainment on March 3; and the Gorgona Dramatic Club will present "Esmeralda" on the 14th.

All men who have ever sung in glee clubs or male quartets, or in choruses, are asked to leave their names with the secretary.

CULEBRA.

The 200 bowling scores for the week ending February 25, are, as follows: Fox, 236; Hall, 235; Cushing, 215; Conlon, 209; Mengel, 202.

The Topic Club will discuss "Problems of the family and the Church" on Monday evening, March 6, from 7.45 to 8.15. Rev. A. A. Nellis will direct the discussion.

The Gorgona Dramatic Club will present "Esmeralda" on Friday evening, March 10. Members, free; nonmembers, 50 cents; children, 25 cents.

The members of the boys' department took a trip to Old Panama beach on Saturday, February 25, preliminary to the organization of the Boy Scouts division in the evening, at which the following officers were chosen: Patrol leaders, Paul Warner, Frank Violett; Adjutant, Randolph Hepler.

The Culebra indoor baseball team will play the Corozal team on Saturday, March 4.

EMPIRE.

The February handicap pool tournament was won by H. M. Pearson.

The musical section of the Empire Y. M. C. A. Musical and Dramatic Society gave a performance of Gaul's "Holy City" on Sunday evening, February 26, before a large audience.

The standing of the local bowling league is as follows:

	Played.	*Won.*	*Lost.*	*P.C.*
Examiner of Accounts	6	6	0	1000
Machinists	6	3	3	500
Civil Administration	6	3	3	500
Central Division	9	3	6	333
Machine Shop	9	3	6	333

Moving pictures were shown on the 25th and will be exhibited again on March 1.

The literary society will hold a discussion on Friday evening, March 3.

Gymnasium classes continue to meet on Tuesdays and Thursdays. Considerable time is being spent by the members in preparing for the group games.

The new bowling alleys recently ordered from the States arrived on the *Advance*.

There will be a lecture on the "Florida Everglades" on Monday evening, March 6, illustrated by stereopticon views.

GATUN.

The "Life problem" club will discuss "Social amusements" next Sunday evening. A member may join this club on any Sunday evening.

A motion picture entertainment will be given on Saturday evening, March 4.

The carnival committee meets Thursday evening, February 23, to discuss plans for the Gatun carnival which will be held March 15, 16, and 17. A rehearsal of those who are to participate in the "College campus" will be held at the chapel on Thursday night.

The clubhouse has been made the recipient of a handsome album containing 75 excellent photographs of scenes on the Canal Zone. The book may be seen at the secretary's office.

CRISTOBAL.

Saturday, a twelve inning game of indoor baseball between the "Regulars" and "Picks" was won by the "Picks"; score, 14 to 12.

On Friday night, the Gorgona Dramatic Club will give "Esmeralda".

PORTO BELLO.

The pool tournament closed February 25. E. S. Wallen won eight out of eight games played and was awarded the prize of a bath robe. M. J. Tuttle secured second place, winning six out of seven games played.

The checker tournament resulted in a tie between Messrs. McIntosh and Arden for first place. Each man lost one game, so a series of five games will be arranged to decide the winner of the Y.M.C.A. pennant.

At the song service on February 19, there was an attendance of 45. Mrs. Chas. Harris played the piano. Mrs. Van Fleet, Miss Harris, Mr. Thomson, and Mr. Bucklin led the singing.

The "Life problem" class on Thursday night was led by Mr. Geer; subject, "Health."

There was a social assemblage at the Y.M. C. A. hall on the night of Washington's Birthday. A musical program was given by the Misses Harris and Day at the piano, and by Chas. Ray on the banjo. Mrs. Harris furnished home made cake.

BASEBALL.

The league season with six clubs closed on Wednesday, February 22, with the game between the Ancon and Commissary-Subsistence teams at the Colon park, in which the visitors were defeated. In winning this game, the Commissary-Subsistence team maintained an unbroken record of victories, and was awarded the pennant. The summary of the game played on February 22, follows:

C.-S.	AB.	H.	PO.	A.	E.
Buch'an,cf.	5	4	0	0	0
Breivogle,lf	4	1	0	0	0
Curtis,2b	2	1	1	1	1
Mosher,1b.	4	2	10	1	0
Ruth'ford,ss	4	2	1	3	0
Lacey,3b	3	1	1	2	0
Hodnett,rf.	2	0	0	0	0
Meegan,c	4	2	12	0	0
Kellogg,p	4	0	2	4	0
Totals	32	13	27	11	1

Ancon.	AB.	H.	PO.	A.	E.
RDren'n,cf.	2	0	1	1	1
LDren'n,rf.	2	1	0	0	0
Tinsley,2b	3	0	0	1	1
R. Smith,c	5	1	10	1	1
Potter, 3b	5	2	0	1	0
James,ss	5	3	3	2	0
Nygren,1b	1	0	8	1	0
Hunter,lf	4	0	2	1	0
Murray,p	2	0	0	3	0
Hull,p	3	0	0	3	0
Totals	32	7	24	14	3

Com.-Subsistence	1	2	0	0	4	1	0	0	x—8
Ancon	0	1	0	0	3	0	0	0	0—4

Runs—C.-S. 7-Ancon, 3. Two base hit—Meegan. Three base hit—Buchanan. Home run—Buchanan. Sacrifice hits—Brievogle, Hodnett, (2), L. Drennan, Nygren. Sacrifice fly—Curtis. Stolen bases—Curtis, (2); Mosher, Rutherford, Tinsley, James, (2). Bases on balls—Off Kellogg, 5; Murray, 1. Struck out—By Kellogg, 12; Murray, 5; Hull, 3. Hit by pitcher—By Murray, 1; (Lacey) by Kellogg, 6—R. Drennan, (2), Hunter, Nygren, 2, Tinsley. Left on bases—C.-S., 6; Ancon, 14. Umpire—Irwin. Time of game—2.15. Attendance, 450. Scorer, J. P. Mead. Wild pitch—Murray, Kellogg, (2), Hull. Hull relieved Murray in the fifth inning after five men had been at bat and no outs.

The standing of the clubs at the close of the season was, as follows:

	P.	W.	L.	P.C.
Com-Sub.	9	9	0	1.000
Ancon	10	6	4	.600
Empire	7	4	3	.571
Gorgona.	8	3	5	.375
Atlantics	9	3	6	.334
Marines.	7	0	7	.000

A new season, with four clubs, was begun on Sunday, February 26, and the schedule, as adopted by the league is, as follows:

RESULTS OF GAMES, FEBRUARY 26.

At Empire—Empire, 3; Ancon, 2.

At Colon—Commissary-Subsistence, 9; Atlantics, 2.

STANDING OF CLUBS.

	P.	W.	L.	P.C.
Com-Sub.	1	1	0	1.000
Empire	1	1	0	1.000
Ancon	1		1	.000
Atlantics.	1		1	.000

SUMMARIES OF GAMES, FEBRUARY 26.

Empire	AB.	H.	PO.	A.	E.
Bryan,3b	3	0	2	4	1
Moore,c	3	0	8	1	0
Markley,2b	3	0	3	2	1
Dixon,ss	4	1	1	5	1
Barney,1b	3	2	9	0	0
Toone, rf	2	0	0	0	0
Dough'ty,rf ‡	1	0	1	0	0
VanZandt,lf.	1	0	1	0	0
Murphy, cf.	3	0	2	0	0
Junger,p	3	1	0	1	0
Totals	26	4	27	13	3

Ancon.	AB.	H.	PO.	A.	E.
RDren'n,cf.	3	1	1	0	0
LDren'n,rf.	4	1	1	0	0
Potter,2b	4	0	3	2	1
Smith, c	4	0	7	0	2
Tinsley, lf.	3	0	1	0	0
James,ss	3	0	1	3	0
Nygren,1b.	2	0	7	0	1
Pearman,3b	3	1	2	2	0
Hull, p.	3	0	0	1	0
Totals	29	3	*23	8	4

Empire	2	1	0	0	0	0	0	0	x—3
Ancon	0	0	0	0	0	0	0	2	0—2

*Murphy out, attempted bunt on 3d strike.

‡Batted for Toone in 8th inning.

Runs—Ancon: Nygren, Pearman; Empire: Bryan, Moore, Toone. Runs earned—Empire, 1. Two base hit—R. Drenner. Sarifice hits—Moore Markley. Stolen bases—R. Drennan, Dixon, Barney, (2), Toone, (2). Bases on balls—off Hull, 5; off Junger, 2. Struck out—by Hull, 6; by Junger, 8. Left on bases—Ancon, 2; Empire, 6. Double plays—James to Nygren; Bryan to Markley to Barney; Bryan to Markley to Barney. Umpire—Irwin. Time of game—1.50. Scorer—Moeller.

C.-S.	AB.	H.	PO.	A.	E.
Buch'an,cf.	4	2	0	0	1
Breivogle,lf	4	0	3	0	0
Curtis,3b	4	1	1	1	1
Mosher,1b.	2	0	6	0	0
Ruth'ford,ss	4	1	1	1	0
Lacey,3b	3	1	2	2	0
Meegan,c	3	1	14	5	2
Hodnett,rf.	4	2	0	0	0
Kellogg,p	3	1	0	2	0
Totals	31	9	27	11	4

Atlantics	AB.	H.	PO.	A.	E.
Hennessy,ss	2	0	3	1	2
Clements,2b	4	0	0	3	2
Edwards, 1b	4	2	11	0	1
H'ring,C.O,c	4	1	8	3	0
Emerson,lf	4	0	2	1	0
Sullivan,cf	2	0	0	1	0
Osborne,rf	1	0	0	0	0
Gamble,rf	2	0	0	0	0
H'ring, G.3b	4	1	0	5	0
Horrigan,p.	3	0	0	3	0
*Yingling	0	0	0	0	0
Totals	30	4	24	17	5

Com.-Subsistence	1	1	1	1	0	5	0	0	x—9
Atlantics	1	0	0	0	0	0	0	0	1—2

Runs—C.-S., Buchanan (3), Curtis, Mosher, Rutherford, Meegan, (2), Hodnett. Atlantics—Hennessy. Clements. Runs earned—C.-S., 4. Two base hit—Kellogg. Sacrifice hit—Breivogle. Stolen bases—Meegan, Hennessy, Edwards, 2. First base on errors—C.-S., 2. Bases on balls—off Kellogg, 5; off Horrigan, 6. Struck out—by Kellogg, 14; by Horrigan, 7. Hit by pitcher—by Horrigan, 2; (Meegan and Kellogg.) Left on bases—C.-S., 8; Atlantics, 6 Wild pitch—Horrigan, 2. Umpire—Freel. Time of game—1:50. Scorer—J. P. Mead. Attendance—300.

*Batted for Gamble in the ninth inning.

DATE.	Ancon.	Colon.	Empire.
February 26.		Atlantics-Com.-Sub.	Empire-Ancon
March 5	Ancon-Empire	Com.-Sub.-Atlantics	
March 12	Ancon-Atlantics		Empire-Com.-Sub.
March 19		Ancon-Atlantics	Empire-Com.-Sub.
March 26	Ancon-Com.-Sub.		Empire-Atlantics
April 2	Ancon-Atlantics	Com.-Sub.-Empire	
April 9		Atlantics-Com.-Sub.	Empire-Ancon
April 14	Ancon-Empire	Com.-Sub.-Atlantics	
April 16	Ancon-Atlantics		Empire-Com.-Sub.
April 23		Com.-Sub.-Ancon	Empire-Atlantics
April 30	Ancon-Com.-Sub.		Empire-Atlantics
May 7	Ancon-Com.-Sub.	Atlantics-Empire	

The Corozal baseball team defeated Balboa, by the score of 19 to 6, on February 19, at Corozal. At Colon, on February 22, Corozal defeated a picked team by a score of 12 to 3.

An exhibition game was played at the Empire park on Wednesday, February 22, between the Empire team, and the Atlantics, the former winning by a score of 6 to 4.

Commission Tug in Pursuit of Bank Robbers.

The Commission tug *La Boca* was placed at the service of the Panama police authorities on Monday, February 27, to pursue four burglars who, after robbing the safe of the Panama Banking Company in Panama, on the previous night, made their escape on a launch. The tug steamed as far as the Pearl Islands, but returned at nightfall after a vain search. On Tuesday morning, February 28, the tug was provisioned for a three days' trip and was again started out to hunt the robbers

The seagoing suction dredge *Caribbean* went into dry dock at Mount Hope on February 17 for extensive repairs, among which will be the placing of new doors and door frames of cast steel in the hoppers.

Missing Men.

Any one having information regarding the whereabouts of Thomas Murray McLaughlin, who left the service of the Commission on October 4, 1910, is requested to communicate with THE CANAL RECORD.

Any one having information regarding the whereabouts of R. M. Henry, who left the States on March 2, 1909, and is supposed to have come to the Isthmus, is requested to communicate with the American Legation, Panama.

Any one having information regarding the present whereabouts of Staunton A. White, who resigned from the service of the Commission on December 20, 1909, is requested to communicate with THE CANAL RECORD.

OFFICIAL CIRCULARS.

Inspection of Floating Equipment.

CULEBRA, C. Z. January 28, 1911.

CIRCULAR NO. 371:

The duties of the Board of Local Inspectors are hereby extended to include an inspection of all floating plant belonging tò the Isthmian Canal Commision and the Panama Railroad Company, at least once every six months, except as to the steamships of the latter company, which are regularly inspected and licensed by the inspectors at the home port of the steamers in the United States.

1. The inspection shall cover the hulls and equipment of same, of any character or description, used in the work of the Isthmian Canal Commission or the Panama Railroad Company, except as noted in the preceding paragraph, with a special view to the preservation of life and property, under all conditions; and the Board shall make a report of its findings, as soon as possible after the inspection, to the Chairman and Chief Engineer, through the Head of Department of Civil Administration, and shall specifically recommend such changes in hull, equipment, etc., as in its opinion may be necessary for proper care of life and property.

2. Copies of reports shall be forwarded direct to the division heads in the case of Commission property, and to the General Superintendent of the Panama Railroad Company in the case of Panama Railroad property.

3. No general repairs shall be undertaken on any piece of marine plant of over fifteen (15) tons burden until same has been inspected and reported on by the Board of Local Inspectors, which report should be taken as a guide as to the work to be done; and to expedite this inspection, it is required that the Board shall receive notice of retirement from service of any piece of plant, as above stated, at least ten days before the time of undertaking the repairs; and at the time the Board receives notice of said retirement, a list of required repairs, prepared by the marine engineer, master, or supervisor, in immediate charge of the plant to be repaired, approved by the supervising engineer and officer in charge of the work, shall be filed in the office of the Board for their information and guidance in making the above inspection.

4. The term "general repairs" is intended to cover the periodic replacing of worn equipment, and such other repairs as may be authorized and made at such time, and do not cover the emergency repairs necessary at any time for the renewal of broken parts, or the running repairs made from day to day.

Compliance with recommendations of the Board is not obligatory on the part of the officials operating the floating equipment until approved by me. This is not intended, however, to prevent such action as may be considered necessary on the Board's recommendations without specific approval.

The Board of Local Inspectors, in addition to the report submitted immediately after inspection, shall prepare a monthly report of work done by them under the terms of this circular, which report shall be filed with the proper authorities by the tenth day of the month succeeding.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Approved:
J. M. DICKINSON, *Secretary of War.*

Baggage on Trip Passes.

CULEBRA, C. Z., February 25, 1911.

HEADS OF DEPARTMENTS AND DIVISIONS:

It is reported that in several instances recently employes, to whom trip passes have been issued, have noted on the pass "With full baggage," without proper authority.

The baggage allowance on first-class I. C. C. transportation on the Panama railroad is 250 pounds, and, hereafter, ticket agents will not honor requests for excess baggage unless a notation to that effect appears on the pass over the signature of a Head of Department or Division.

H. F. HODGES,
Acting Chairman.

Injury Leave for Borrowed Mechanics.

CULEBRA, C. Z., February 24, 1911.

CIRCULAR NO. 357-A:

Whenever an employe temporarily obtained from the Mechanical Division under the provisions of Circular No. 357 is injured, the cost of all injury leave incident thereto will be borne by the division in which and for which he was working at the time the injury was sustained.

H. F. HODGES,
Acting Chairman, Isthmian Canal Commission.
Second Vice-President, Panama Railroad Company.

Transfer of Equipment.

CULEBRA, C. Z., February 24, 1911.

CIRCULAR NO. 370:

Whenever it is desired to transfer equipment from one division or department to any division or department of the Isthmian Canal Commission, or from the Isthmian Canal Commission to the Panama Railroad Company, or from the Panama Railroad Company to the Isthmian Canal Commission, request will be forwarded to the Surveying Officer, who will submit his recommendation to the Chairman and Chief Engineer, and if approved, the necessary instructions pertaining to the transfer will be issued, by direction of the Chairman, from the office of the Chief Quartermaster.

H. F. HODGES,
Acting Chairman and Chief Engineer.

Reservations on Colon, March 19.

CULEBRA, C. Z., February 24, 1911.

HEADS OF DEPARTMENTS AND DIVISIONS:

Practically the entire state room accommodations of the *Colon*, scheduled to sail from Cristobal on Sunday, March 19, 1911, having been reserved for members of the Congressional party on their return trip, no further requests will be issued for this sailing. Sufficient accommodations remain to provide for the limited number of requests already issued.

By direction of the Acting Chairman.

Respectfully,
C. A. MCILVAINE, *Chief Clerk.*

Stop-over Privileges on 24-Trip Tickets.

OFFICE OF THE MASTER OF TRANSPORTATION,
COLON, R. P., February 20, 1911.

Passenger Conductors and Collectors:

TRANSPORTATION BULLETIN NO 39.

On account of the evident abuse of the stop-over privilege on the 24-trip tickets, it is now ordered that those tickets must be made out in either indelible pencil, or ink, and clearly and distinctly dated. They will be honored for transportation on the date of issue only, and stop-overs, when allowed, will be noted on the back by conductors or collectors with indelible pencil, with the following notation:

"Off No......(at)........(date).........."
(Initials.)

The succeeding conductor or collector to whom this transportation is presented, will be careful to note that the date is for the day transportation is presented, otherwise it will not be honored.

Report of particulars in any violation of the above should be made in writing to this office.

A. K. STONE,
Master of Transportation.

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal and Colon during the week ending February 25, 1911:

Norman, February 21, from Brunswick, with 28,505 cypress ties for stock.

Ancon, February 22, from New York, with 23,540 barrels cement for Atlantic Division; 114 040 bags cement for Pacific Division.

Advance, February 23, from New York, with 14 automatic buckets, 25 pieces propeller blades, 1 crank shaft for Atlantic Division; 76 packages castings for Central Division; 11 packages iron covers, 2 barrels snatch blocks, 3 barrels sheaves for Mechanical Division; 17 cases drill parts, 10 cases varnish, 12 cases electrical goods, 12 cases seamless tubes, 6 coils rope for stock; and a miscellaneous cargo, the whole consisting of 262 packages, weighing 104 tons.

Atenas, February 23, from New Orleans, with 200 bundles rods and straps for Mechanical Division; 138 bales alfalfa hay, 46 rolls cotton duck for stock.

Santa Marta, February 23, from New York, with 25 bundles brooms, 230 crates wooden handles for stock.

Antillian, February 24, from Liverpool, with 15 dredge buckets for Pacific Division.

Rainfall from February 1 to 25, 1911, Inclusive.

STATIONS,	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
*Chepo	.32	14	.32
Ancon	.71	15	2.75
Balboa	1.01	11	3.22
*Miraflores	1.30	11	2.41
Pedro Miguel	.78	11	1.37
Rio Grande	.35	11	.91
Central Section—			
Culebra	.37	11	.73
*Camacho	.36	12	.64
Empire	.21	11	.54
Gamboa	.19	12	.70
*Juan Mina	.90	12	1.36
Alhajuela	1.57	12	2.26
*El Vigia	1.13	12	3.11
*Gorgona	.65	6	1.84
San Pablo	.29	19	1.12
Tabernilla	.23	**	.87
Bohio	.24	24	1.49
*Monte Lirio	.22	24	1.67
Atlantic Section—			
Gatun	.41	14	2.13
*Brazos Brook	.40	5	1.94
Cristobal	.25	13	1.74
Porto Bello	4.00	12	†6.65
*Nombre de Dios	.84	12	3.13

*Standard rain gage—readings at 5 p. m., daily. Automatic rain gage at unstarred stations—values midnight to midnight.

†To 5 p. m., February 24.

**12th and 14th.

The following vessels arrived at and departed from the port of Balboa during the week ending February 25, 1911:

Arrivals—February 19, *Venetia*, from San Francisco; *Olson and Mahoney*, from San Francisco; February 20, *Vicksburg*, from Corinto; *Mexico*, from Callao; February 23, *Arica*, from Guayaquil; *Peru*, from San Francisco.

Departures—February 19, *Newport*, to San Francisco; February 20, *Ucayali*, to Callao; February 21, *Huasco*, to Valparaiso; February 22, *City of Para*, to San Francisco; *Quito*, to Buenaventura; *Venetia*, to San Francisco.

RAINFALL IN 1910.

There was less rainfall in the Canal Zone during the year 1910 than during the preceding year, but an excess, as compared with 1908. The rainiest month of 1910 at Cristobal was November; at Empire, July; and at Ancon, August. The month of least rain at Cristobal and Empire was January, and at Ancon, February. The rainfall at Porto Bello, situated on the Atlantic coast 16 miles from Colon, for 1910, was 67.16 inches less than during 1909, when the total for the year was 237.28 inches, 103.20 inches of which fell during the months of November and December. The rainiest month at Porto Bello in 1910 was November, with 23.08 inches, and the driest month, February, with 5.89 inches. The rainfall at that point was greater for each month in 1909 than for the corresponding month in 1910, with three exceptions, those of March, August and October. The following table shows the rainfall for the past three years at three principal points in the Canal Zone, and at Porto Bello for 1909, and 1910, by months:

MONTH.	Cristobal.			Empire.			Ancon.			Porto Bello.*	
	1908	*1909*	*1910*	*1908*	*1909*	*1910*	*1908*	*1909*	*1910*	*1909*	*1910*
January	3.84	10.61	2.94	.75	2.28	.70	.12	2.90	1.22	20.90	14.05
February	1.08	1.92	3.58	.00	1.50	.75	.24	2.90	.43	6.82	5.89
March	3.53	1.85	5.46	.41	.21	1.60	.03	.18	1.83	3.56	6.32
April	1.27	3.56	3.30	1.36	3.33	4.24	1.37	2.92	3.71	12.56	7.14
May	22.49	7.21	12.09	12.91	7.73	11.08	7.64	9.10	9.89	9.69	9.30
June	10.53	17.49	13.63	8.21	7.84	10.14	4.28	9.90	8.82	17.70	15.25
July	14.76	12.83	21.07	11.79	8.27	12.60	6.83	9.01	9.26	26.33	22.80
August	16.89	15.42	14.93	8.11	7.20	10.08	11.48	6.84	12.00	13.83	20.71
September	11.57	16.33	12.05	9.76	7.22	8.99	5.93	3.86	4.84	13.99	13.15
October	10.96	19.31	15.65	8.87	21.14	12.57	8.79	8.77	8.86	8.70	9.54
November	31.72	42.50	30.04	4.46	20.99	8.85	9.12	15.14	4.29	45.03	23.08
December	9.07	34.38	15.20	5.09	9.44	9.06	4.16	12.39	10.63	58.17	22.89
Total	137.71	183.41	149.94	71.72	97.15	90.66	59.99	83.91	75.78	237.28	170.12

* Porto Bello station established in September, 1908.

COMMISSARY DEPARTMENT.

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.· 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning March 1.

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	6
Shoulder, neck trimmed off, (4 pounds and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg, (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing, per pound	10
Shoulder, for roasting (not under 4 pounds), per pound	12½
Chops—Shoulder, per pound	16
Chops, per pound	24
Loin for roasting, per pound	24
Cutlets, per pound	28
Pork, loin chops or roast, per pound	14
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	8
Corned, per pound	12, 14, 16
Chuck roast (3 pounds and over), per pound	12
Pot roast, per pound	12½
Rib roast, second cut (not under 3½ pounds), per pound	16
Rib roast, first cut (not under 3 pounds), per pound	18
Sirloin roast, per pound	19
Rump roast, per pound	19
Porterhouse roast, per pound	20
Steak, chuck, per pound	12½
Round, per pound	13
Rib, per pound	18
Sirloin, per pound	19
Rump, per pound	19
Porterhouse (not less than 1½ pounds), per pound	20
Tenderloin (Western) per pound	24
Teuderloin (Native), per pound	30

MISCELLANEOUS.

	Price.
Livers—Beef, per pound	7
Calf, each	60
Half, each	30
Sausage—Pork, per pound	15
Bologna, per pound	10
Frankfurter, per pound	12
Lieberwurst, per pound	10
Sweet bread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	*24
½-dozen, only	*13
Bluefish, fresh, per pound	16
Cod, fresh, per pound	10
Halibut, fresh, per pound	15
Oysters, in 1-quart kegs, keg	50
Oysters in ½-gallon kegs, keg	1.00

POULTRY AND GAME.

	Price.
Chickens—Fancy roasting, large, each	1.25
medium, each	1.00
Fowls, each	60, 70, 80, 90, 1.00
Ducks, large, each	1.30
medium, each	1.10
Broilers, each	60
Turkeys, per pound	28
Squabs, each	35
Capons	2.10
Rabbits, dressed, each	40
Pheasants, each	70, 1.00
Partridges, each	50
Grouse, each	85

CURED AND PICKLED MEATS.

	Price.
Ham—German, Westphalia, per pound	36
Sugar cured, per pound	18
Sliced, per pound	20
Half, for boiling, per pound	19
Boiled, per pound	25
Hocks, per pound	‡8
Picnic, Winchester, per pound	15
Bacon—Breakfast, whole piece, per pound	23
Breakfast, sliced, per pound	24
Beef, salt, family, per pound	9½
Pork, salt, family, per pound	14
Ox tongues, each	75
Pigs' feet, per pound	9
Tongues, per pound	14
Sliced bacon in 1-pound tins, per tin	30
In 1-pound jars, per jar	30

DAIRY PRODUCTS

	Price.
Butter—Creamery special, per pound	32
Cheese—Roquefort, per pound	38
Philadelphia cream, cake	10
Young America, per pound	20
Swiss, per pound	26
Edam, each	1.00
Cheese—Camembert, in large tins, tin	38
Camembert, in small tins, tin	14
Neufchatel, cake	6
Gouda, per pound	34
Milk (Inspected or certified), per bottle	**25
(Pasteurized), bottle	**18
Buttermilk, bottle	**15
Ice cream, quart	‡25
½-gallon	‡50

VEGETABLES AND FRUITS.

	Price.
Beets, per pound	3
Celery, per head	6
Carrots, per pound	3
Cabbage, per pound	3
Cucumbers, per pound	10
Kale, per pound	6
Lettuce, per pound	*10
Onions, per pound	3½
Potatoes, white, per pound	2½
sweet, per pound	2
Parsnips, per pound	3
Romaine, per pound	14
Squash, per pound	4
Spinach, per pound	10
Turnips, per pound	3
Yams, per pound	3
Apples, per pound	6
Cranberries, per pound	10
Grapefruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12
Tangerines, each	2

*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Misdirected Letters.

ANCON, C. Z., February 28, 1911.

The following insufficiently addressed letters originating in the United States and possessions, have been received in the office of Director of Posts and may be had upon the request of the addressees:

Baird, J. W.
Biggstaff, Miss Ethel
Blanch, T. Russell
Chambers, John
Curry, Rishard
Drury, George F.
Fernandez, Mrs. Federico (r)
Fischer, Arthur
Graham, George J.
Hawkins, George
Hubley, Mrs. Dora
Hudson, H. H.
Humphries, Will
Kearney, Edw. C.
Killcourse, Guy
Kirkpatrick, Sam J.
Martinez, Maria
Maxwell, J. (c)
McQueen, Philip
Neff, John R.
Oleson, John
Pearson, Mrs. J. M.
Perry, E. W.
Phipps, John H.
Poole, Victor
Powders, William G.
Reynolds, Joseph P.
Rice, Miss Eva C.
Sayland, Louis
Shigley, L. M.
Stade, Geo. (n)
Spriegel, Mrs. F.
Tai Lung Woo
Van Dervoort, J. S.
Vaughn, Mrs. (nee Kennedy)
Wagner, C. B.
Walter, Geo. L.
Wilkes, Samuel G.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending March 8, 1911, (75th meridian time):

DATE.	Low.	High.	Low.	High.	Low.
	A. M.	A. M.	A. M.	P. M.	P. M.
March 2	......	4.40	10.55	5.00	11.17
March 3	......	5.17	11.33	5.37	11.55
			P. M.		
March 4	......	5.55	12.10	6.15	......
March 5	12.35	6.35	12.50	6.55	......
March 6	1.18	7.17	1.35	7.37	......
March 7	2.03	8.00	2.20	8.25	......
March 8	3.00	9.00	3.20	9.23	......

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, February 25, 1911. All heights are in feet above mean sea level.

DATE AND DATE	STATION.				
	Vigia.	Alhajuala	Gamboa.	Bohio.	Gatun Lake.
Sun. Feb. 19	127.0	93.4	46.7	14.9	14.8
Mon. Feb. 20	126.9	93.2	46.2	14.7	14.6
Tues. Feb. 21	126.5	93.0	45.9	14.4	14.4
Wed. Feb. 22	126.4	92.9	45.6	14.2	14.2
Thurs. Feb. 23	126.2	92.8	45.5	14.0	14.0
Fri. Feb. 24	126.2	92.8	45.5	13.8	13.8
Sat. Feb. 25	126.3	92.8	45.6	13.6	13.6
Height of low water	125.0	92.0	45.0		

LOST—On February 22, in Panama, a watch and fob, inner case of watch bearing the inscription "Fanney to N. H. T. Hamill, Class 1889." Reward of $10. Communicate with P. O. Box. No. 189, Empire, C. Z.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Allianca	P. R. R.	Wednesday	Mar. 1
Colon	P. R. R.	Tuesday	Mar. 7
Advance	P. R. R.	Monday	Mar. 13
Panama	P. R. R.	Saturday	Mar. 18
Allianca	P. R. R.	Friday	Mar. 24
Colon	P. R. R.	Friday	Mar. 31
Advance	P. R. R.	Thursday	Apr. 6
Panama	P. R. R.	Wednesday	Apr. 12
Allianca	P. R. R.	Tuesday	Apr. 18
Colon	P. R. R.	Monday	Apr. 24
Advance	P. R. R.	Saturday	Apr. 29

CRISTOBAL TO NEW YORK.

Ancon	P. R. R.	Monday	Mar. 6
Panama	P. R. R.	Tuesday	Mar. 7
Allianca	P. R. R.	Monday	Mar. 13
Colon	P. R. R.	Sunday	Mar. 19
Advance	P. R. R.	Saturday	Mar. 25
Panama	P. R. R.	Friday	Mar. 31
Allianca	P. R. R.	Thursday	Apr. 6
Colon	P. R. R.	Wednesday	Apr. 12
Advance	P. R. R.	Tuesday	Apr. 18
Panama	P. R. R.	Tuesday	Apr. 25
Allianca	P. R. R.	Monday	May 1
Colon	P. R. R.	Saturday	May 6
Advance	P. R. R.	Friday	May 12

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Metapan	U. F. C.	Thursday	Feb. 23
Prinz Joachim	H.-A.	Saturday	Feb. 25
Zacapa	U. F. C.	Thursday	Mar. 2
Thames	R. M.	Saturday	Mar. 4
Sibiria	H.-A.	Saturday	Mar. 4
Almirante	U. F. C.	Thursday	Mar. 9
Prinz Aug. Wilhelm	H.-A.	Saturday	Mar. 11
Santa Marta	U. F. C.	Thursday	Mar. 16
Trent	R. M.	Saturday	Mar. 18
Metapan	U. F. C.	Thursday	Mar. 23
Prinz Joachim	H.-A.	Saturday	Mar. 25
Oruba	R. M.	Saturday	Apr. 1
Magdalena	R. M.	Saturday	Apr. 15

COLON TO NEW YORK.

Santa Marta	U. F. C.	Thursday	Mar. 2
Tagus	R. M.	Tuesday	Mar. 7
Metapan	U. F. C.	Thursday	Mar. 9
Prinz Joachim	H.-A.	Tuesday	Mar. 14
Zacapa	U. F. C.	Thursday	Mar. 16
Oruba	R. M.	Tuesday	Mar. 21
Almirante	U. F. C.	Thursday	Mar. 23
Prinz Aug. Wilhelm	H.-A.	Tuesday	Mar. 28
Magdalena	R. M.	Tuesday	Apr. 4

NEW ORLEANS TO COLON.

Cartago	U. F. C.	Wednesday	Feb. 22
Turrialba	U. F. C.	Saturday	Feb. 25
Parismina	U. F. C.	Wednesday	Mar. 1
Abangarez	U. F. C.	Saturday	Mar. 4
Heredia	U. F. C.	Wednesday	Mar. 8
Atenas	U. F. C.	Saturday	Mar. 11

COLON TO NEW ORLEANS.

Atenas	U. F. C.	Thursday	Mar. 2
Cartago	U. F. C.	Thursday	Mar. 2
Turrialba	U. F. C.	Thursday	Mar. 9
Parismina	U. F. C.	Thursday	Mar. 9
Abangarez	U. F. C.	Thursday	Mar. 16
Heredia	U. F. C.	Thursday	Mar. 16

COLON TO BARBADOS, CALLING AT TRINIDAD.

Thames	R. M.	Tuesday	Mar. 14
Trent	R. M.	Tuesday	Mar. 28
Oruba	R. M.	Tuesday	Apr. 11
Magdalena	R. M.	Tuesday	Apr. 25

The next sailing of the Leyland Line will be as follows: *Colonian* on or about March 19, for New Orleans, via Kingston, Ja.

Hamburg-American steamers leave for New York every Tuesday at 10 a. m.; for Jamaica every fortnight, connecting there with steamers for all points in Cuba; for Port Limon every Tuesday, direct, or by way of Bocas del Toro.

Royal Mail steamers leave for New York on alternate Tuesdays at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursday at 3 p. m.; for New Orleans via Port Limon and Puerto Barrios on Thursday at 4 p. m., and for New York on Thursday at 11 a. m.

Sailings of the French line (Cié Générale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3d and 20th of each month.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, MARCH 8, 1911. No. 28.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Excavation in Central Division During February.

The total excavation in the Central Division for the 23 working days during the month of February, 1911, was 1,630,758 cubic yards, of which 1,623,152 cubic yards were from the Canal prism, 5,736 cubic yards from the Obispo diversion, and 1,870 cubic yards were outside work. The amounts excavated, and remaining to be excavated, in the Central Division are, as follows:

	Excavated.	Remaining.
	Cu. Yds.	*Cu. Yds.*
Culebra Cut	59,671,665	24,515,059
Chagres Section	11,361,857	1,576,437
	71,033,522	26,091,496

The excavation in the prism for this month is the greatest February prism excavation of record within the limits of the Central Division, and exceeds the next highest record, made in February, 1909, by 77,144 cubic yards, and that of February, 1910, by 77,670 cubic yards. The total excavation from the Canal prism in the Culebra section of the Central Division, including the small amount of work done on the Obispo diversion, was 1,409,338 cubic yards in February, 1911, which is much the largest output in this section for the same month since operations were commenced by the United States, the greatest previous output having been 1,259,173 cubic yards in February, 1910.

Canal Work in February.

The grand total of Canal excavation to March 1 was 131,829,436 cubic yards, leaving to be excavated 50,708,330 cubic yards.

The total for February was 2,714,174 cubic yards, as compared with 2,602,995 cubic yards in February, 1910, and 3,148,879 cubic yards in February, 1909. Of the total, 2,691,036 cubic yards were "work excavation," and 23,138 cubic yards were "plant excavation."

The dry excavation amounted to 1,759,083 cubic yards and was principally by steam shovels. The dredges removed 950,787 cubic yards and 4,304 cubic yards were sluiced, in addition to the amount pumped into Gatun Dam by suction dredges. The progress on the locks at Gatun, Pedro Miguel and Miraflores is referred to elsewhere in this issue.

In the Atlantic Division, the total excavation was 574,199 cubic yards. Of this total, 97,613 cubic yards were dry excavation, and the remainder was removed by the dredges in the Atlantic entrance.

The total excavation in the Central Division was 1,630,758 cubic yards, and further reference to this work is published elsewhere in this issue.

In the Pacific Division, the total excavation was 509,217 cubic yards, 386,866 cubic yards of which were taken out by the dredges at the Pacific entrance.

A detailed statement of the excavation, and a summary of the work on the locks and dams, follow:

ATLANTIC DIVISION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation
Dry excavation—	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*
Locks, Dam and Spillway	50,511	....	50,511
Mindi	47,102	....	47,102
Total	97,613	....	97,613
Wet excavation—			
Atlantic entrance	455,318	21,268	476,586
Locks, Dam and Spillway	....	....	....
Total	455,318	21,268	476,586
Total wet and dry excavation	552,931	21,268	574,199
CENTRAL DIVISION.			
Dry excavation—			
Culebra Cut	1,403,602	....	1,403,602
Chagres section	215,246	1,870	217,116
Obispo Diversion	5,736	....	5,736
Wet excavation—			
Chagres section	4,304	....	4,304
Total	1,628,888	1,870	1,630,758
PACIFIC DIVISION.			
Dry excavation—			
Locks, Dams and Spillways	19,745	....	19,745
Diversions	....	....	....
Prism, south of Pedro Miguel Locks	15,271	....	15,271
Total	35,016	....	35,016
Wet excavation—			
Pacific entrance	386,866	....	386,856
Miraflores Locks	87,335	....	87,335
Diversions	....	....	....
Total	474,201	....	474,201
Total wet and dry excavation	509,217	....	509,217
TOTAL CANAL EXCAVATION.			
Dry excavation	1,757,213	1,870	1,759,083
Wet excavation	933,823	21,268	955,091
Total	2,691,036	23,138	2,714,174

Mean rainfall along Canal (eleven stations) 1.46 inches.

By "Work" Excavation is meant excavation actually made for one of the constituent parts of the Canal, such as Prism, Diversions, or Locks etc.; that is, it represents material taken from the area to be occupied by the Canal, and constitutes excavation useful for the completed Canal.

By "Plant" Excavation is meant excavation outside of any of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc. It includes material necessary to be excavated for construction purposes only and is chargeable against the particular plant item for which it is performed, such as Prism, Diversions, Locks, etc.

DAM AND LOCK CONSTRUCTION.

MATERIAL.	Atlantic.	Pacific.	Total.
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*
Concrete laid in locks	72,103	57,907	130,010
Concrete laid in dams and spillways	6,609	....	6,609
Fill placed in dams	512,741	119,739	632,480

Concrete Piles for Guide Wall Foundation.

The upper guide wall at Gatun locks will be a continuation of the center wall and will extend into Gatun Lake a distance of 1,500 feet from the upper guard gate. The foundation for 850 feet of it, in the bed of the lake, will be on piles, and the wall itself in this section will be of cellular, reinforced concrete construction. The reinforced concrete piles for this work are now being made at Gatun, where two casting platforms have been built on the east bank of the lower locks. The piles are rectangular in cross section, and are reinforced by four longitudinal angles near the four corners, connected at intervals of 18 inches by lateral straps. The reinforcement is in sections 12 feet long, so that piles of any length in multiples of 12, may be made. On the lower end of each pile is a cast iron shoe, and the upper end is heavily reinforced to give strength for the blow of the driver. In driving, a "driving head" is placed over the top of the pile. It consists of a piston which passes into a cylinder in which there is a cushion of sand, rope, and wood. The hammer strikes the piston and the blow is transmitted by it through the cushion to the pile. Six of these piles were driven last week, one to a depth of sixty feet, and the others to depths varying from 18 to 24 feet, and in every case the results were good. Two steam pile drivers will be used in this work, and each will drive 10 piles in eight hours. It is estimated that 3,500 piles will be required for the foundation.

At the Pacific Entrance.

The Canal at the Pacific entrance is completed from deep water to a point opposite the Panama railroad wharf at Balboa, a distance of about five miles, and apart from the removal by the suction dredge *Culebra* of a few loads of fill each month, there is no further dredging to be done in that section. The open water channel continues inland for a distance of about three miles from the Balboa wharf, and in this part of the Canal three of the dredges are now working. The depth of the channel varies from 30 to 45 feet at mean tide, and certain sections of it have been excavated to its final width of 500 feet. Considerable work, however, remains to be done on the west bank, where several rock patches project into the channel, and these are being drilled and mined preparatory to

NOTES OF PROGRESS.

(*Continued.*)

their removal by the dredges. Two of the Pacific Division dredges were recently set at work in the prism south of the dam at Miraflores, as their ladders are not long enough to permit them to continue the excavation in the open channel, except at mean tide, or below, and to keep them there would necessitate laying off one crew and working only a 12-hour day. The dredging fleet at the Pacific entrance consists of one seagoing suction dredge, four French ladder dredges, and one 5-yard dipper dredge. A new seagoing 2-yard ladder dredge for the Pacific end of the Canal is now under construction at Renfrew, Scotland, and is due for delivery at Balboa about September 1, 1911. The dredging work on the American Canal in the Pacific Division was begun in January, 1907, and up to March 1, 1911, a total of 26,581,119 cubic yards had been excavated.

The Atlantic Entrance.

In the Atlantic entrance to the Canal the channel is completed to its full width of 500 feet as far as the French canal, which is five miles and 2,438 feet inland from deep water in Limon Bay. The channel is 40 feet deep to a point 3,900 feet from deep water, 35 feet to a point three miles inland, 30 feet deep to a point 4 miles and 800 feet inland, and 20 feet deep as far as the French canal. The amount of material to be excavated in this section is 30,600,000 cubic yards of earth, including fill, and 3,800,000 cubic yards of rock. On March 1st, 20,175,000 cubic yards of earth had been taken out, and 2,250,000 cubic yards of rock, the earth excavation being 66 per cent, and the rock 59 per cent completed. The plant engaged in this work includes a seagoing suction dredge, three old French ladder dredges, and two modern dipper dredges, and auxiliary fleet. The excavation of rock under water is accomplished by drilling and blasting the rock prior to dredging. The drilling is done by eight common well drills, mounted on a barge served by one boiler and moved from place to place according as the work is completed. This excavation is being done at less cost than dry excavation, the greatest element of economy being the method of drilling, in which the whole battery of drills is moved at one time, and is served by a small force of men.

Naos Island Breakwater.

The breakwater between Balboa and Naos Island has been constructed for about 8,300 feet, leaving about 4,500 feet to be constructed before the island is reached.

Colon Breakwater.

The breakwater which extends from the west shore of Limon Bay, out toward the Canal entrance, had been extended 3,137 feet on March 4, and rock had been dumped to within 15 feet of the surface of the water for about 3,075 feet. A total of 202,659 cubic yards of rock, quarried on the main land near the breakwater, has been placed. The piles which are driven for the trestle encounter all sorts of material, from hard coral bottom, which must be blasted, to a mixture so soft that they penetrate to a depth of 40 feet. The breakwater will be armored with hard rock from Porto Bello, which will be placed by means of derricks operating on barges. Plans for the derrick barges have been completed. The driving of the trestle was begun in August, 1910, and the dumping of rock in September.

Notice to Free Masons.

The ground for the new Masonic temple to be erected on the corner of Eleventh and Bolivar streets, Cristobal, will be broken on Sunday morning, March 12, at 10 a. m. All Masons sojourning on the Isthmus are invited to be present and join with Sojourner's Lodge, No. 874, on this occasion. They will meet in the hall, corner of Fifth and Bolivar streets, Colon, on the arrival of the 9 a. m. train, proceeding from there to the lot.

C. G. Carty, R. W. M.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

About 56 per cent of the concrete for the system of three twin locks at Gatun has been laid, the exact amount in place at the close of work on March 4, being 1,160,752½ cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending March 4, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily. and the auxiliary plant 9 hours.

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
February 27	2,260	37:41	8	452	6:40	2	241¾	2,988¾
February 28	2,588	42:33	8	348	7:40	2	295½	3,257
March 1	2,394	42:22	6	426	7:40	2	266¾	3,112¾
March 2	2,496	42:41	6	366	7:40	2	162	3,095½
March 3	2,486	44:12	6	416	7:40	2	203½	3,129½
March 4	2,582	43:06	6	454	6:50	2	256½	3,339½
*Portable mixers	....	....	......	229	....	......	....	....
Total	14,806	251:55	6.67	2,691	42:50	......	1,425½	18,922½
Previously reported								1,141,830
Grand total								1,160,752½

*The 229 yards shown for the portable mixers are reinforced concrete, and were placed on the following days: February 27th, 35 yards; February 28th, 25½ yards; March 1st, 26 yards; March 2d, 71½ yards; March 3d, 24 yards; March 4th, 47 yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is over 67 per cent completed, 565,547 cubic yards, out of a total of 837,400, having been placed at the close of work on March 4. The record for each of the six 8-hour working days of last week, follows:

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant.						Large stone.	Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete Placed.	Hours worked.	No of mixers.		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
Feb. 27	930	15:00	2	748	16:58	3	32	3:00	1	....	1,710
Feb. 28	1,016	15:00	2	600	15:82	3	34	3:00	1	....	1,650
March 1	810	12:00	2	596	14:82	3	....	....	......	....	1,406
March 2	856	14:00	2	828	18:30	3	18	2:00	1	....	1,702
March 3	740	10:00	2	822	19:00	3	....	....	......	....	1,562
March 4	976	13:00	2	714	18:00	3	....	....	......	....	1,690
Total	5,328	79:00	2	4,308	102:52	3	84	8:00	.5	....	9,720
Previously reported										4,178	555,827
Grand total										4,178	565,547

MIRAFLORES LOCKS.

About 11 per cent of the concrete for the system of locks at Miraflores was in place on March 4, the total amount on that date being 146,243 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

Date.	Auxiliary Plant.										Total.
	2-cubic yard mixers.			¾-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
Feb. 27	424	7:50	2	412	27:50	5	....	....	......	33	869
Feb. 28	464	8:00	2	285	20:50	5	....	....	......	20	769
March 1	544	10:50	2	514	37:00	5	....	....	......	30	1,088
March 2	480	9:00	2	654	40:00	5	53	5:00	1	28	1,215
March 3	472	8:67	2	495	26:00	4	79	5:25	1	13	*1,070
March 4	490	8:67	2	461	30:25	4	85	6:00	1	12	†1,070
Total	2,874	52:34	2	2,821	181:25	4.66	217	16:25	.5	136	6,081
Previously reported										3,397	140,162
Grand total										3,533	146,243

*Includes 11 cubic yards laid by hand. †Includes 22 cubic yards laid by hand.

GATUN LOCKS

Excavation is About Completed and Nearly 56 Per Cent of Concrete is in Place.

Excavation in Gatun Locks is practically completed, all that remains being a small amount of material which has slid into the lower lock site from the east bank. In the north approach to the locks, however, excavation has only been begun by a 20-inch suction dredge, which will dig to a depth of 45 feet below sea level for the approach channel, and also dig the foundation for the center guide wall, and the north wing walls. This work will be carried on while concrete laying is in progress in the lower lock, the two pits being separated by a bulkhead. When the suction dredge has finished its work, it will be withdrawn and the pit will be unwatered so that concrete may be placed.

About 56 per cent of the concrete for the locks and approaches is in place. The record of this work by months since August, 1909, and the output of last week, are shown in tables published elsewhere in this issue. The estimated amount of concrete to be placed is 2,085,000, and there therefore remained to be laid on March 4th, 924,348 cubic yards. In the upper locks all concrete laying is finished, excepting that around the culvert valves and the reinforced concrete of the operating tunnel in the center wall. In the middle locks the side walls are completed, excepting the gate and valve monoliths, and the center wall is about half done. The lift wall between the middle and lower locks was completed on March 7. Concrete laying has but fairly begun in the lower locks, about 10 per cent of the floor being in place. Work is in progress on trestles on which the steel forms for the wall monoliths will be moved from the middle to the lower locks. Concrete laying will then be begun in the side walls, and they will be built to a height of 25 feet, in order that they may act as retaining walls for the banks, and it will then be safe to move the cableway towers to any portion of the lower locks. At present the banks in a number of places are not considered sufficiently stable to hold the towers.

The contractor who has in charge the manufacture and erection of the lock gates expects that the first shipment of material for the gates will arrive on the Isthmus about April 1. Meanwhile, he is constructing and erecting a bridge across the east lock of the upper flight, and is at work on a similar bridge across the west lock. Material for the gates will be lowered into place by locomotive crane operating from these bridges. The bridges themselves are movable and will be used for erecting all of the gates.

Gatun Dam and Spillway.

Gatun Dam is about 60 per cent completed. An analysis of the wet and dry fill will be found in "The Record of Canal Work" published elsewhere in this issue. The fill in place on March 1, was 13,848,000 cubic yards, about equally divided between the wet and dry, and almost two-thirds of this has been placed during the past 14 months. In the east half of the dam, the average height of the earth toes is 77 feet above sea level. The hydraulic fill is at plus 60 feet, and is being allowed to dry out during the present dry season. As the height of the dam increases the dry fill of the toes is allowed to encroach on the hydraulic fill, and, at present, the toes are within 40 feet of the limit prescribed for them. The dry and wet fills of the west half are being carried on. The dry fill of the toes has reached an average height of 52 feet above sea level, and the hydraulic fill is at 40 feet above.

In the spillway, work on the side of the concrete dam is being carried on behind coffer dams, and this part of the work will be finished during the present dry season. The eleven concrete piers, which have been built across the channel to a height of 45 feet above sea level, will be used in holding back the water from any section of the dam site in which it is desired to lay concrete. Grooves have been left in them to hold boards which will act as a dam. The piers are on the upper line of the spillway dam and will form a part of the completed dam after they have served their purpose in the construction work.

Concrete was placed in the spillway of Gatun Dam during the week ending March 4, as follows:

Date.	Concrete Laid.	Hours worked.	No. Mixers.
February 27	264	6:00	2
February 28	340	17:00	2
March 1	352	17:00	2
March 2	350	17:00	2
March 3	370	17:00	2
March 4	232	15:00	2
Total	1,908	89:00	2
Previously reported	120,736		
Grand total	122,644		

Test of Gate Valves.

In the approach to the upper locks at Gatun, preparations are being made for the test of a Stoney gate valve under the full height of 85 feet of water, against which it will be obliged to operate when the Canal is completed. The test will be made by sealing up the culvert in which the gate is installed and filling the valve chamber. This will test the efficiency of the sealing devices and show the effect on the spring side seals when the gate is operated, and the initial force which will be required to break the water seal and open the valves about one foot. In the spillway at Gatun Dam, three of the piers which have been built for coffer dam purposes have been so constructed that the Stoney gate valves may be tested under working conditions.

Pedro Miguel Locks.

With the greater part of the walls in place, the work of laying concrete in the locks at Pedro Miguel is proceeding more slowly than formerly, although the amount placed in February shows an increase over the preceding month. The concrete work is now largely confined to the ends of the lock, where the extensions of the center and side walls are advancing toward completion. The construction of the outlet at the lower end of the center wall culvert is under way, and the work of building the overhead arches that form the extensions over the south end outlets of the side wall culverts is about to be begun. Three of the Stoney gate valves, and four of the guard gate valves, have been placed in position to date. The work of laying concrete in this lock was begun on September 1, 1909, and up to March 5th, 565,547 cubic yards, out of a total of 837,400, had been laid, indicating that over 67 per cent of the concrete necessary to complete the lock is in place. The earlier part of the concrete work, including all of the south guide wall as it now stands, was accomplished with stationary and portable mixing machinery. With the installation of the permanent handling and mixing plant, consisting of two berm cranes and four chamber cranes, an impetus was given the work, which, a few weeks ago, had advanced so far as to permit of the dismantling of one of the berm cranes for transfer to Miraflores Locks.

Miraflores Locks.

As at Pedro Miguel, the early concrete work in the upper of the two locks at Miraflores, which was begun in June, 1910, has proceeded with the use of auxiliary and portable mixers, and up to March 4, over 146,000 cubic yards had been laid by this method. The stationary mixing plant in this lock consists of two 2-cubic yard mixers, situated in the east storage trestle, and its output has been carried into the lock on cars. The plant will be abandoned, and the mixers transferred to the east berm crane, which, it is expected, will be ready for operation within the next ten days. The west berm crane is also practically completed. These cranes will deposit concrete directly into the walls. A considerable section of the east wall of the lock has been completed, and it is being extended into the forebay; the batter, or foundation section of the center wall is two-thirds finished, and work on the west side wall has been started. The floor and lateral culvert system is completed, with the exception of joining the culverts to the west wall tube. Several of the cylindrical valves have been erected, and the settling basin above the upper guard gate is nearly finished.

The preliminary work for excavating the material in the lower lock, not removed by the sluicing and pumping process, is well advanced. The incline construction track into the lock is completed, and a shovel cut has been made at the upper end for the purpose of beginning the excavation for the west wall.

Nombre de Dios Sand Output.

The projected loading bin at Nombre de Dios has not been constructed, but good results are now obtained from the 18-inch suction dredge pumping sand directly into the barges. The output of sand varies between 35,000 and 40,000 cubic yards a month, and the quantity that can be supplied is limited only by the barge capacity. The weekly consumption at Gatun varies in accordance with the amount of concrete placed, the amount of sand used being about two-fifths of a cubic yard for every yard of finished concrete.

Hydraulic Excavation in Pacific Division.

Part of the lower lock excavation at Miraflores was accomplished by the hydraulic process, and the work has now been extended to the section of the Canal prism lying between the lower lock and the dredged channel to Balboa. The process involves the disintegrating and sluicing of the original material by means of powerful pumps forcing the water at a high pressure through four monitors, or giants, and the lifting of the material thus disintegrated out of the pit by dredge pumps. Most of the material disposed of so far has been utilized in making the core fill of the west dam at Miraflores, but as this work draws to a conclusion, it will be used for reclaiming the tidal swamps between Corozal and the Canal.

THE EMERGENCY DAMS.

Contracts Soon to be Let for This Feature of the Locks.

Bids will be opened in the Washington office of the Isthmian Canal Commission on March 30 for six emergency dams, two each for the locks at Gatun, Pedro Miguel, and Miraflores, and for the machinery to operate them. The bids have been advertised for in the usual way, and, in addition, responsible European manufacturers have been invited to submit bids. The law governing the letting of contracts provides that materials for the Canal may be purchased from foreign manufacturers in case the President deems the bids of American manufacturers exorbitant.

The dams are to be completed and erected at Gatun and Pedro Miguel by January 1, 1913, and at Miraflores by September 1. 1913. The masonry at Gatun will be ready on June 1, 1911, at Pedro Miguel on September 1, 1911, and at Miraflores on January 1, 1912. Tests are provided for at the shops of the manufacturer and a final test when the dams are completed and erected, and twenty per cent of the total cost will be withheld until the final test has been met. The total amount of material for the six dams is 12,000 tons.

The purpose of these dams is to check the flow of water through the locks, in case of damage, or in case it should be necessary to make repairs, or to do any work in the locks, which would necessitate the shutting off of all water from the lake levels. The dams will be placed in pairs in the approaches to the upper locks about 200 feet above the upper guard gates, and each will close the approach to one of the twin locks.

Each dam is constructed on a steel truss bridge of the cantilever type, pivoted on the side wall of the approach to the locks, and when not in use, resting on the side wall parallel to the channel. When the dam is in use the bridge will be swung across the channel with the long arm resting on the center wall. A series of six girders, hinged to this bridge in such a way that they may be raised and lowered through an angle of 90 degrees, will be lowered into the approach channel, with their ends resting in iron pockets embedded in the masonry. After the girders are lowered in place, six panels, moving in them on roller bearings, will be allowed to roll down until they form a horizontal tier spanning the width of the Canal and damming the water to a height of ten feet. When this operation is completed, another series of six panels will be lowered, and the operation will be continued until a dam is constructed from the bottom upward, completely closing the channel. When this dam has checked the main flow of water, the remainder, which is due to the clearance between the vertical sides of the gates, may be checked by driving steel pipes between the sides of the adjacent panels.

The bridge which will hold the girders will be larger than any swing bridge yet constructed. Its total length will be 263 feet, the long arm which extends over the lock and holds the dam, approximately 163 feet, and the short arm about 98 feet. The extreme width will be 93 feet. At the end of the short arm will be built the operating house, in which machinery will be installed for turning and wedging the bridge. This bridge, when operated by electricity, must be safely and easily opened in two minutes, and when operated by hand, in 30 minutes. The dams for Pedro Miguel and Gatun will be five panels high and all of the same size, but those at Miraflores will be only four panels high due to the less depth of water at Miraflores Locks.

The wicket girders, on which the gate panels will operate, will be plate girders of the box type, braced by the top lateral system of sway frames. The material will be open hearth nickel steel, excepting the rods, which will be structural open hearth steel. The panels for the gates will consist of frames with buckle plates riveted to them, the material to be vanadium steel castings and structural open hearth rolled steel. On the down stream side of each frame, flange wheels, acting on roller bearings with ball bearing end thrust, will be fastened to the castings, and on these wheels, the plates will be lowered or lifted on the wicket girders.

Each dam will be operated in three movements, and the machinery for operating is, therefore, in three classes—(1) The gate moving machinery, (2) machines for raising and lowering the wicket girders, and (3) machines for hoisting the gates on the girders. It will be driven by electric motors, but hand capstans will be provided for use in emergency.

The bridge operating machinery will be erected in the operator's house, at the end of the short arm, and will consist of two motors for turning the bridge, a limit switch to prevent operation beyond an arc of 90 degrees, and a motor for driving the wedges which will hold the bridge firmly in place when it is at rest across the channel, or on the lock wall. The machine for raising and lowering each of the six wicket girders of each dam will consist of a hoisting drum driven by a motor, and equipped with a limit switch. The gates on the wicket girders will roll into place by gravity, and, when the dam is to be opened, they will be hoisted out of the water by a machine. There will, therefore, be six gate hoisting machines for each dam, and as many motors to drive them.

The chief items of materials for the six emergency dams are, as follows: Thirty-six wicket girder hoisting machines, with 36 motors and limit switches, thirty-six gate hoisting machines with 36 motors. Twelve motors to operate the bridge turning machinery, with six limit switches and six motors for driving the wedges. Nickel steel for vertical and horizontal trusses, and longitudinal and transverse girders, 9,290,000 pounds. Riveted structural steel for sway frames, portals, lateral systems, floor, machinery supports, and gates, 5,852,000 pounds. Carbon steel castings for center pivot, wedges and wedge seats, gear wheels, bearings, etc., 2,340,000 pounds. Carbon steel forgings, shafts and pins, 300,000 pounds. Cold rolled steel, 132,000 pounds. Turned bolts, 60,000 pounds. Checkered steel plates for floors, 180,000 pounds. Gas pipe for hand railing, 72,000 pounds. Brass pipe for hand railing in operators' houses, 46,000 pounds. Manganese bronze for worm wheels and center discs, 39,000 pounds. Chrome vanadium forging steel for upper and lower center discs, 24,000 pounds. Vanadium case hardening steel for flanged gate wheels, 290,000 pounds. Vanadium steel castings, wheel castings for gates, carriage yokes, main pinions, main pinion bearings, and rack segments, 1,022,000 pounds.

All persons on the Isthmus, who at any time have been students at the University of Virginia, and all employes of the Isthmian Canal Commission, who at any time have held positions on the faculty of an American college, are requested to send their names to W. M. James, Ancon.

Small Slide at Paraiso.

The digging necessary to maintain the track on the 95-foot level on the east bank of Culebra Cut at Paraiso has caused a small slide, which includes the site of the commissary building, and it is likely that this building will be moved.

PERSONAL.

Colonel H. F. Hardie, U. S. A., arrived on the Isthmus on the *Panama* on March 1.

Mr. Stanley W. Wood, for six years on the engineering forces of the Canal and Panama railroad recently passed the examination for a commission in the Army, standing second out of a class of 39, and he has been commissioned a second lieutenant in the infantry.

Action in the Case of M. H. Lough.

As a consequence of the affirmation of the Supreme Court of the Canal Zone of the verdict rendered by the Court of the Third Judicial Circuit, finding Mr. Matthew H. Lough guilty of criminal negligence in having caused the death of Conductor E. C. Tinsley in a railroad collision, at Bohio, on August 15, 1910, a mass meeting was held at Las Cascadas on Sunday, February 25, at which the following resolutions were adopted:

> We, the citizens of the United States of America and employes of the Isthmian Canal Commission on the Canal Zone in mass meeting assembled do on this 26th day of February, 1911, hereby severely protest against the persecution and unjust prosecution of one M. H. Lough, who is now unjustly confined in the Culebra penitentiary after nearly seven months of dilatory prosecution on the part of the civil authorities of the Canal Zone, which has left said M. H. Lough a wreck mentally and physically. And we believe the continuance of such persecution will be the death of M. H. Lough. Therefore, be it resolved,
>
> First. We demand the liberty of said M. H. Lough.
>
> Second. That the Chief Engineer of the Isthmian Canal Commission, or his representative, and the Governor of the Canal Zone use his or their prerogative and annul the proceedings and unjust decision in this case, as establishing a precedent unjust, unfair and a relic of barbarism, under which we do not care to remain as employes.
>
> Third. That unless said M. H. Lough is liberated as above requested and the iniquitous decision and unjust precedent annulled, you may consider our services with the Isthmian Canal Commission terminated at six o'clock, p. m., Monday, February 27, 1911 (changed to Friday, March 3, 1911, by a later resolution), and arrange to transport us to the United States where we can enjoy the protection of the Constitution, a jury trial, tranquillity, and the pursuit of happiness.

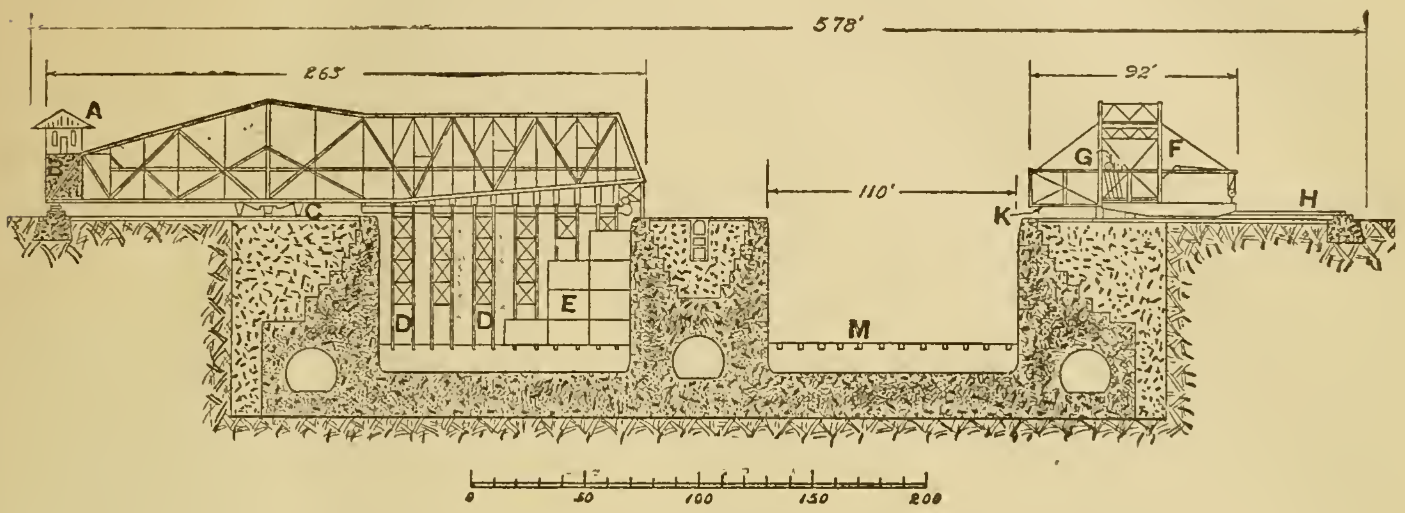
The resolutions were presented to the Acting Chairman by a number of the men the same afternoon, and he informed them that no action could be taken until the case had been carefully gone over, which he would have done, so that the matter could be laid before the Chairman, upon the latter's return from the States. The Chairman declined to take any action whatsoever in reference to these resolutions. A petition for Mr. Lough's pardon was subsequently circulated, which will be forwarded to the President, together with the records in the case for consideration and action. Mr. Lough's case was taken up with the President by a committee of the locomotive engineers during his visit to the Canal Zone, and he directed that this course be pursued in case the Supreme Court sustained the action of the lower court, and so advised the committee.

EMERGENCY DAM—MIRAFLORES LOCKS.

[DAMS AT GATUN AND PEDRO MIGUEL LOCKS ARE FIVE PANELS HIGH, INSTEAD OF FOUR, AS SHOWN HERE.]

Emergency Dam is shown closed with Wicket Girders and some Gates lowered in place.

Emergency Dam is shown open with Wicket Girders and Gates raised.


578'
265'
92'
110'
A
B
C
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D
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M
K
G
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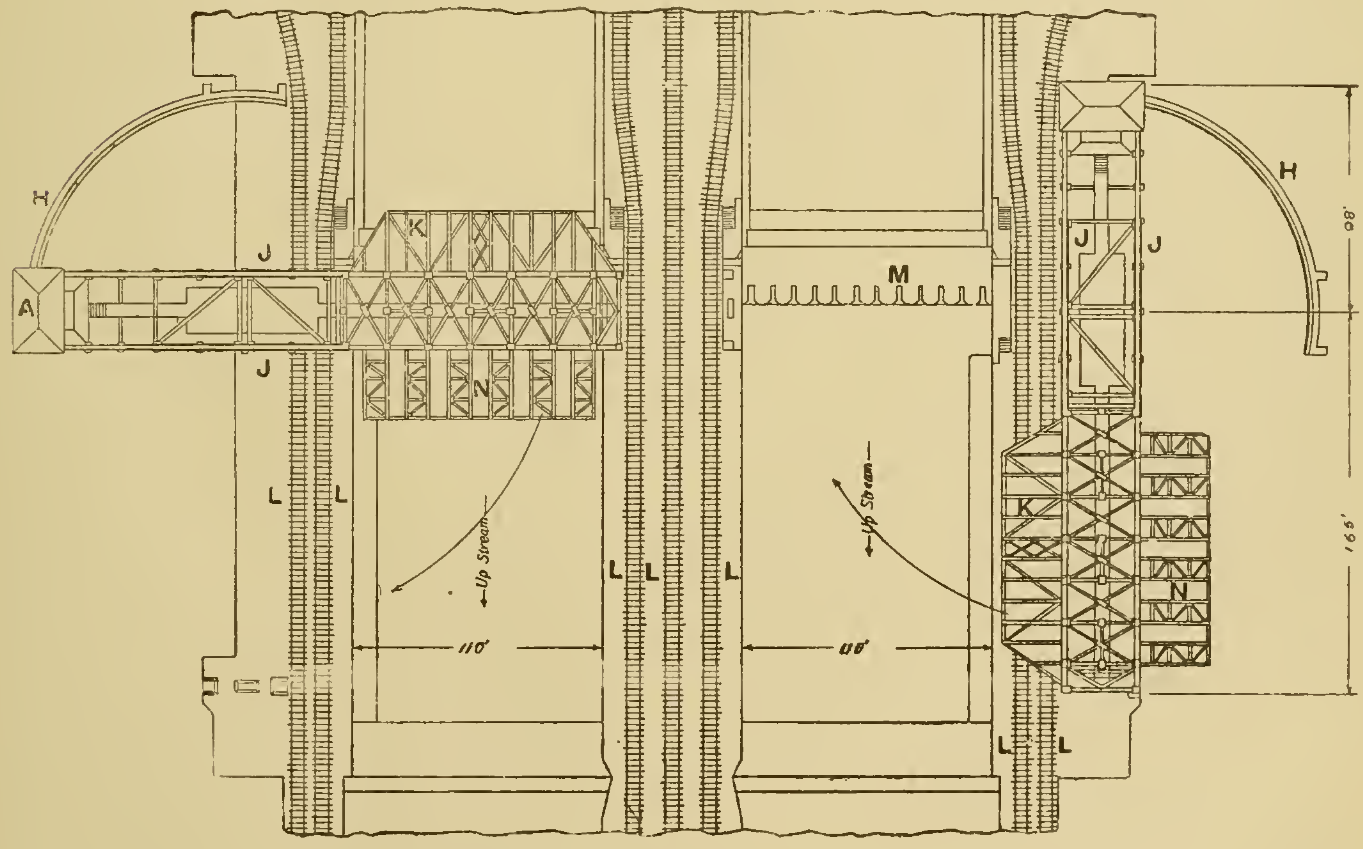
H
0
50
100
150
200

Elevation looking Downstream.


H
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Up Stream
110'
M
H
J
J
K
N
Up Stream
110'
L
L
98'
165'

PLAN—EMERGENCY DAM.

LEGEND—(SCALE 1 to 1000.)

Legend:

A—Operators' House.
B—Concrete counterweight.
C—Center bearing.
D—Wicket girders.
E—Gates.

Legend:

F—Girder hoisting machinery.
G—Gate hoisting machinery.
H—Quadrant.
J—Vertical truss.

Legend:

K—Horizontal truss.
L—Electric locomotive track.
M—Sill.
N—Booms for wicket girder.

RECORD OF CANAL WORK SINCE AMERICAN OCCUPATION.

MONTHLY TOTALS BY CUBIC YARDS OF EXCAVATION AND LOCK AND DAM CONSTRUCTION.

[All figures are of work useful for the completed Canal.]

DRY EXCAVATION.

CENTRAL DIVISION.

MONTHS.	CULEBRA SECTION.* 1904.	1905	1906.	1907.	1908.	1909.	1910.	1911.	CHAGRES SECTION.** 1907.	1908.	1909.	1910.	1911.
January	....	70,650	120,990	566,750	1,227,022	1,150,249	1,323,693	1,356,394	....	169,447	389,399	175,802	255,385
February	....	75,200	168,410	639,112	1,248,265	1,194,454	1,259,173	1,409,338	....	200,145	450,182	286,309	219,550
March	....	132,840	239,178	815,270	1,290,885	1,434,597	1,509,728	....	..	324,233	619,491	484,846	....
April	....	126,749	213,177	879,527	1,242,574	1,272,746	1,288,845	....	....	329,483	510,020	428,777	....
May	27,556	75,935	196,209	690,365	960,840	1,126,963	1,099,279	....	....	235,902	386,170	248,974	....
June	32,551	76,905	212,623	624,586	1,134,032	1,242,134	1,305,141	....	....	322,145	275,900	164,389	....
July	31,599	78,570	159,759	770,570	1,121,325	1,200,828	1,153,810	....	....	345,757	233,897	166,106	....
August	35,056	49,210	244,823	786,866	1,171,927	1,173,370	1,377,714	....	2,900	368,683	231,543	234,404	....
September	25,220	44,085	291,452	753,468	1,122,860	1,235,978	1,339,948	....	21,546	346,948	235,818	234,290	....
October	19,695	52,940	327,009	834,499	1,160,101	1,302,901	1,320,314	....	25,627	424,911	221,409	271,409	....
November	28,860	60,540	221,642	790,632	1,022,576	1,070,792	1,209,554	....	44,044	336,390	93,619	260,882	....
December	42,935	70,630	307,689	1,025,485	1,210,046	1,152,022	1,211,400	....	98,652	383,948	105,044	197,481	....
Totals	243,472	914,254	2,702,991	9,177,130	13,912,453	14,557,034	15,398,599	2,765,732	192,769	3,787,992	3,752,492	3,153,669	479,935

ATLANTIC DIVISION. PACIFIC DIVISION.

MONTHS.	COLON (MINDI)† 1909.	1911.	GATUN LOCKS, DAM AND SPILLWAY.†† 1908.	1909.	1910.	1911	PEDRO MIGUEL LOCKS.‡ 1908.	1909.	1910	1911.	MIRAFLORES LOCKS, DAMS AND SPILLWAY.‡‡ 1908.	1909.	1910.	1911.
January	45,664	....	292,155	102,690	125,011	65,889	....	83,726	27,320	15,690	7,203	61,202	31,479	48,744
February	46,046	47,102	282,797	95,031	123,738	50,511	....	58,242	9,486	6,809	39,046	53,689	15,300	12,936
March	70,713	....	374,598	90,051	132,007	....	....	95,624	6,784	....	73,194	51,417	18,184	....
April	74,368	....	373,456	70,009	103,243	....	....	101,365	9,129	....	98,943	60,060	12,148	....
May	71,407	....	266,747	52,786	82,958	....	....	57,523	10,405	....	73,023	47,588	20,250	....
June	80,101	....	244,951	36,556	88,088	....	13,228	70,971	8,420	....	68,691	55,653	21,994	....
July	82,378	....	213,359	39,058	95,503	....	22,648	77,503	4,410	....	104,369	50,999	11,990	....
August	66,249	....	188,262	40,346	99,737	....	22,217	58,025	12,789	....	94,248	35,446	17,548	....
September	61,437	....	145,990	49,945	103,040	....	28,833	48,825	10,405	....	90,923	31,803	8,590	....
October	72,643	....	154,064	57,321	118,327	....	48,875	39,002	7,433	....	74,700	25,349	9,850	....
November	42,009	....	118,278	63,452	94,552	....	55,401	20,207	10,636	....	52,930	18,644	9,400	....
December	....	....	119,904	96,590	72,030	....	65,578	28,342	11,195	....	69,650	20,083	17,906	....
Totals	713,015	47,102	2,774,561	793,835	1,238,234	116,400	256,780	739,355	128,412	22,499	846,920	511,933	194,639	61,680

*Total to March 1, 1911, 59,671,665 cubic yards.

**Total to March 1, 1911, 11,361,857 cubic yards, of which 40,908 cubic yards were removed by sluicing.

†Total to March 1, 1911, 1,523,923 cubic yards; in this total are included 172,851 cubic yards removed in 1907, and 590,955 cubic yards removed in 1908.

††Total to March 1, 1911, 6,289,837 cubic yards; in this total are included 26,628 cubic yards excavated October to December, 1906, and 1,340,179 cubic yards in 1907; there were also 38,425 cubic yards removed by dredges at Gatun Dam site in 1907.

‡Total to March 1, 1911, 1,147,046 cubic yards

‡‡Total to March 1, 1911, 1,615,172 cubic yards; there were also 78,233 cubic yards excavated at Balboa locks and dams in 1907; and 255,162 cubic yards at different points in prism to March 1, 1911.

WET EXCAVATION.

ATLANTIC DIVISION. PACIFIC DIVISION.

M'THS.	ATLANTIC ENTRANCE.§ 1907.	1908.	1909.	1910.	1911.	GATUN LOCKS † 1908.	1909.	PACIFIC ENTRANCE.§§ 1905.	1906.	1907.	1908.	1909.	1910.	1911.	Miraflores Locks.§§§ 1910.	1911
Jan	111,100	490,701	521,[illegible]50	510,055	520,181	....	97,043	....	95,940	94,710	460,250	469,529	518,936	379,810	....	89,24
Feb	110,002	427,722	444,910	433,448	455,318	....	132,291	....	95,940	93,480	663,519	671,477	285,791	386,866	....	87,33
March	84,145	546,886	461,208	412,325	....	....	141,838	....	116,820	92,319	783,281	865,696	462,588	....	....	....
April	69,889	496,366	470,635	190,574	....	....	17,938	....	110,700	104,855	676,539	731,767	534,322	....	....	....
May	133,847	564,386	315,370	447,578	....	....	52,011	....	112,340	122,157	530,466	720,753	484,509	....	....	....
June	124,118	572,749	182,575	458,021	....	....	38,829	50,676	62,697	133,575	656,621	844,685	475,486	....	....	....
July	109,922	625,497	348,451	423,092	....	....	....	41,533	98,400	108,338	696,170	733,181	515,782	....	....	....
August	194,297	638,217	422,846	508,829	....	....	....	54,530	111,930	168,284	737,774	623,263	506,969	....	....	....
Sept	403,842	624,776	410,574	451,873	....	....	....	114,308	105,780	153,975	750,080	662,976	473,585	....	....	....
Oct	415,120	505,260	314,778	549,588	....	....	....	81,836	97,170	357,122	762,276	720,920	467,873	....	40,000	....
Nov	422,797	570,832	457,889	600,708	....	....	....	71,176	92,988	365,423	609,089	627,791	425,570	....	47,444	....
Dec	442,835	679,604	489,121	482,570	....	8,583	....	71,094	90,528	349,551	729,960	727,460	387,034	....	68,681	....
Totals	2,621,914	6,742,996	4,839,407	5,528,661	975,499	8,583	479,950	485,153	1,191,233	2,143,789	5,056,025	8,399,498	5,538,745	766,676	156,125	176,57

§Total to March 1, 1911, 22,135,942 cubic yards; in this total are included 399,820 cubic yards excavated in 1905, and 1,027,645 cubic yards in 1906.

§§Total to March 1, 1911, 26,581,119 cubic yards; there were also 172 cubic yards removed by steam shovels during October, 1908.

§§§Total to March 1, 1911, 642,350 cubic yards; in this total are included 309,647 cubic yards excavated in 1909.

†Total to March 1, 1911, 488,533 cubic yards.

CONCRETE IN LOCKS AND DAMS.

MONTHS.	GATUN LOCKS. 1909.	1910.	1911.	PEDRO MIGUEL LOCKS. 1909.	1910.	1911.	MIRAFLORES LOCKS. 1909.	1910.	1911.
Jan	....	54,136	72,919	....	16,273	38,513	....	....	24,018
Feb	....	55,696	72,103	....	13,218	37,011	....	146	20,896
March	....	60,998	....	....	18,793	....	....	314	....
April	....	63,227	....	....	24,522	....	....	13	....
May	....	74,273	....	....	29,576	....	....	27	....
June	....	89,401	....	....	30,631	....	....	1,603	....
July	....	84,001	....	....	41,464	....	28	3,672	....
Aug	1,298	85,686	....	....	51,264	....	74	6,030	....
Sept	12,294	76,720	....	2,370	50,702	....	....	18,133	....
Oct	29,378	86,949	....	8,310	61,422	....	....	22,159	....
Nov	30,270	75,152	....	10,169	64,248	....	....	23,871	....
Dec	42,832	80,212	....	13,007	42,834	....	....	21,533	....
Total	116,072	886,451	145,022	33,856	444,947	75,524	102	97,501	44,914

From March 17, 1909, to March 1, 1911, there were placed in the Spillway of Gatun Dam 122,988 cubic yards of concrete, including 6,609 cubic yards placed in February, 1911; in Miraflores Dam there were placed 321 cubic yards up to March 1, 1911.

FILL PLACED IN DAMS.

M'THS.	GATUN.* 1910. Wet.	1910. Dry.	1911. Wet.	1911. Dry.	PEDRO MIGUEL.† 1910. Dry.	1911. Dry.	MIRAFLORES.‡ 1910. Wet.	1910. Dry.	1911. Wet.	1911. Dry.
Jan	178,254	236,994	211,992	218,690	....	....	....	28,151	89,243	24,685
Feb	292,215	271,788	301,733	211,008	11,510	....	....	1,438	87,335	32,404
Mar	210,387	332,661	....	....	22,860	....	....	5,385	....	....
April	242,440	263,437	....	....	31,394	....	....	....	....	....
May	249,283	194,868	....	....	23,572	....	....	6,480	....	....
June	381,166	258,653	....	....	1,350	....	....	7,356	....	....
July	462,092	180,111	....	....	....	....	....	4,290	....	....
Aug	406,606	229,774	....	....	....	....	....	10,898	....	....
Sept	457,637	223,102	....	....	....	....	....	11,220	....	....
Oct	480,732	259,619	....	....	....	....	40,000	14,370	....	....
Nov	129,666	266,105	....	....	....	....	47,444	8,960	....	....
Dec	243,121	169,575	....	....	....	....	68,681	39,224	....	....
T'tal	3,736,599	2,886,687	513,725	429,698	90,686	....	156,125	137,772	176,578	57,089

*Dry fill begun in January, 1907, and 2,096,477 cubic yards of wet, and 3,241,418 cubic yards of dry fill were placed in 1907, 1908 and 1909.

†170,166 cubic yards placed in dams up to December, 1909, inclusive.

‡138,587 cubic yards of wet fill and 472,091 cubic yards of dry fill were placed in dams up to December, 1909.

CANAL EXCAVATION TO DATE.

By French Companies		78,146,960
French excavation useful to present Canal		29,908,000
By Americans—		
Dry excavation	81,902,159	
Dredges	49,927,277	
Total		131,829,436
May 4 to December 31, 1904	243,472	
January 1 to December 31, 1905	1,799,227	
January 1 to December 31, 1906	4,948,497	
January 1 to December 31, 1907	15,765,290	
January 1 to December 31, 1908	37,116,735	
January 1 to December 31, 1909	35,096,166	
January 1 to December 31, 1910	31,437,677	
January 1 to February 28, 1911	5,422,372	

TOTALS BY DIVISIONS AND AMOUNT TO BE EXCAVATED.

DIVISIONS.	Amount excavated.		Remaining to be Excavated.	
Atlantic—				
Dry excavation	7,813,760	30,476,660	459,294	12,880,685
Dredges	22,662,900		12,421,391	
Central—				
Culebra Cut	59,671,665	71,033,522	24,515,059	26,091,496
All other points	11,361,857		1,576,437	
Pacific—				
Dry excavation	3,095,785	30,319,254	3,284,357	11,736,149
Dredges	27,223,469		8,451,792	
Grand totals		131,829,436		50,708,330

PANAMA WATER SUPPLY.

Salt Water Percolates into Cocoli Lake—New Source of Supply Established.

The water in Cocoli Lake reservoir, which, in conjunction with the Rio Grande reservoir, furnishes the water supply for Ancon and Panama, has been charged with salt since February 10 to such an extent as to make it unfit for domestic or mechanical purposes. The Cocoli reservoir was formed by the building of a dam west of the lock site at Miraflores, and, although salt water has been pumped into the hydraulic fill of this dam since September, 1910, there had been no indication of salt in the water prior to the above date. New material was added to the old fill on the west toe of the dam, and it is supposed that a leak developed at this point, as the hydraulic fill containing the salt water was raised above the old fill about the same time. The salt water pool has since been lowered, and a puddled connection is being made between the old and new parts of the fill for the purpose of preventing, if possible, further percolation. No leakage, however, was discovered in digging the trench for the puddle core.

A board was appointed to consider the best method of supplementing the Rio Grande supply, and after determining that it would be impossible to reduce the amount of chlorine in Cocoli Lake during the present dry season, it recommended that the Caimitillo River, which crosses the Panama railroad relocation just north of the Miraflores tunnel, be used for the purpose. This stream has a discharge at present of 3,000,000 gallons in 24 hours, and an analysis of the water made by the Commission's physiologist shows it to be potable, provided it is treated and filtered. There are comparatively few inhabitants on the watershed of the stream, and as it will be used chiefly in the dry season, the small amount of surface drainage will be of no consequence. To utilize this supply, the board recommended that a pump be installed on the river bank, near the railroad culvert, and a 10-inch pipe be laid to the settling tank of the Cocoli Lake pumping plant, about 4,000 feet distant. The pump, as well as the remainder of the material is now available on the Isthmus, and the work will probably be completed this week.

Rock Crushing at Porto Bello.

Improvements in the conveying apparatus, which carries rock from the crusher to the storage bins at Porto Bello, were largely responsible for the record of 84,072 cubic yards in January, as compared with 80,244 cubic yards in December. During December, the crushers worked 12 hours a day the first half of the month, and 10 hours the second half; while in January they worked 12 hours a day to the 15th, and 10 hours the balance of the month. In February, the daily record for an 8-hour day, and the best average hourly record, were broken on the 25th, when 3,389 cubic yards were crushed, an average of 423 cubic yards an hour. On February 14, the regular working day was reduced from 10 to eight hours. The average number of hours per day worked between February 1 and 14 was 7.68 out of 10 hours, and in the second half of the month, it was 6.48 out of eight hours. The average number of cubic yards crushed per hour of the working day in the first half of the month was 334.3, and during the second half of the month 365. The average number of cubic yards crushed per working hour during the first half of the month was 435.4, and during the second half of the month 450.8. The force at Porto Bello now consists of 540 men, 88 of whom are white "gold" employes.

A statement of the work done at the Porto Bello crusher, by days, for the week ending March 4, follows:

DATE.	Hours worked.	Cubic Yards.
February 27	7:31	3,399
February 28	5:23	2,607
March 1	6:54	3,19[illegible]
March 2	7:33	3,264
March 3	7:14	2,953
March 4	7:53	2,830
Total	42:28	18,251

Visit of the Civil Engineers.

Members of the American Society of Civil Engineers, and their friends, are due to arrive on the Isthmus on March 9 for a visit of one week. The *Zacapa* from New York is bringing 71 men and 22 women, and the *Abangarez* from New Orleans, 42 men, 12 women, and two children.

In the program for the entertainment of the party, the following changes have been made: Tuesday morning, March 10. After visiting Gorgona shops, the party will be taken to Culebra to view the relief map and the model of the locks and dams, and later to view Culebra Cut from the top of the hill; thence it will return by train to Empire, where lunch will be served at the Commission hotel. After lunch, the party will view the Cut from the Empire suspension bridge after which, it will return to Panama. The program for the afternoon remains unchanged

The program for Saturday morning will omit the visit to Culebra; otherwise the schedule will be unchanged.

Spanish War Veterans.

The following were installed as officers of Camp Col. Sibert, No. 1, United Spanish War Veterans, at Gatun on Sunday, March 5, by Commander Col. Gahon: Commander, C. T. Young; senior vice-commander, W. D. Rodgers; junior vice-commander, Evon Monchow; chaplain, the Rev. Mr. Purdy; surgeon, Dr. E. A. Vaughn; officer of the day, Geo. H. Hooker,; officer of the guard, L. Guarion; sergeant of the guard, N. E. Emmons: adjutant, A. O. Ludwig; quartermaster, N. Hearn; trustees, D. A. Garson, Col. Sibert, W. J. Dewey.

Chagres Camp, No. 2 of Culebra, was installed at the same time with the following officers: Commander, Charles C. Cameron; senior vice-commander, E. J. Hoffman; junior vice-commander, F. R. Bronson; adjutant, Don H. Beaman; quartermaster, Harry S. Farish; surgeon, Dr. C. J. McGillicuddy; officer of the day, Frank E. Frink; officer of the guard, E. H. Tracy; chaplain, S. J. Boyd.

BASEBALL.

RESULTS OF GAMES, MARCH 5.

At Ancon—Ancon, 6; Empire, 5.
At Colon—Commissary-Subsistence, 8; Atlantics, 6.

STANDING OF CLUBS.

	P.	W.	L.	P.C.		P.	W.	L.	P.C.
Com-Sub.	2	2	0	1 000	Ancon ...	2	1	1	.500
Empire ..	2	1	1	500	Atlantics.	2	0	2	.000

SCHEDULE OF GAMES, MARCH 12.

At Ancon—Ancon vs Atlantics.
At Empire—Empire vs. Commissary-Subsistence.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

The 200, or over, bowling scores for the week are, as follows: Huttlemeier, 210; Warner, 202; Herrington, 200. The 100, or over, duckpin scores are, as follows: Franks, 106; Hill, 102.

The third period in the "Topic" club will be conducted by H. N. Sollenberger on Monday evening, March, 13, at 7:45. Subject to be discussed, "Health, stimulants, and narcotics."

The billiard tournament will open on Monday, March 13. As this tournament is to be a handicap, all persons wishing to enter should hand in their names to Mr. DuBois not later than Saturday evening, March 11.

EMPIRE.

The following high scores were rolled from February 23, until March 4: Parkis, 201, 205; Giavelli, 224; Goolsby, 205; [illegible], 203; Bardelson, 213; Brown, 202; Edwards, [illegible]. Duckpins—Rodeghiero, 112, 110; Scull, 102, 101, 101; McLeod, 111.

All pool and billiard tables in the Empire clubhouse have been put in first-class condition for another year.

There are 15 entries for the March handicap pool tournament.

GATUN.

"Reciprocity with Canada" will be discussed by the literary and debating club on March 8. Three new members have been added to the club.

The "Life problem" club discussed "Social amusements" on Sunday evening, March 5. The discussion will be continued on March 12.

The clubhouse has added to its salable merchandise list large photographic views of Panama and the Canal Zone, and pennants of the various fraternal orders on the Zone.

Twenty-five men have enrolled in the health league. Apply to Mr. Ludwig for particulars.

CRISTOBAL.

In the bowling match with Culebra on Saturday night, Cristobal won two of the three games, with the following scores:

Culebra.				Cristobal.			
Carlson	85	83	89	Barnett	75	100	92
Baumer	85	83	90	Howard	96	82	85
Koperski	85	69	74	Adams, D	109	101	94
Kersey	92	76	95	Louch	91	95	79
Case	82	83	110	Herring	74	99	107
Total	429	394	458	Total	445	477	457

Work will be begun shortly on the two new bowling alleys, the material being assembled at the building.

The Cristobal vaudeville troupe will present their vaudeville show on Friday, March 10, and will appear at Gorgona on March 11, and at Empire on March 31, with possibly other dates later on.

The Cristobal chorus has been limited to 14 men, who will continue to practice with the vaudeville show.

PORTO BELLO.

Twenty members have joined the health league which at present is being organized in all parts of North America by Geo. J. Fisher, M. D. The chief value for Zone members will be in the health literature received from time to time.

The Caveny Entertainment Company from the States will be at Porto Bello on Friday evening, March 10.

Ancon Crusher.

A statement of the rock crushed at Ancon quarry during the week ending March 4, follows:

DATE.	Hours worked.	Cubic Yards.
February 27	9:50	2,674
February 28	9:55	2,847
March 1	9:10	3,201
March 2	10:05	2,977
March 3	8:30	2,595
March 4	9:40	3,357
Total	57:10	17,651

Pacific Division Sand Service for February.

DESTINATION.	Number of Cars.	Cubic Yards.
Pacific Division	2,366	35,490
Atlantic Division	9	205
Central Division	17	255
Quartermaster's Department	2	50
Panama railroad	1	25
Miscellaneous	1	25
Total	2,396	36,050

OFFICIAL CIRCULARS.

Inspection and Adjustment of Scales.

CULEBRA, C. Z., March 4, 1911.

CIRCULAR No. 373:

The Mechanical Division is hereby charged with the inspection, adjustment, and repairing of all counter, platform, wagon, and railroad scales used by the different divisions and departments of the Isthmian Canal Commission and of the Panama Railroad Company.

Each scale will be inspected and adjusted once each quarter, and if repairs are found necessary, their character and extent will be reported by the Superintendent of the Mechanical Division to the head of the division or department concerned.

Division engineers, the General Superintendent of the Panama Railroad Company, and heads of departments, will furnish the Superintendent of the Mechanical Division with a list showing the kind and location of all scales under their jurisdiction.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Disposition of Surveyed Property.

CULEBRA, C. Z., February 24, 1911.

ALL ACCOUNTABLE OFFICERS:

Whenever it becomes necessary or advisable to change the approved disposition of equipment or property which has been surveyed, it is directed that request for such change be made direct to the Surveying Officer, who will submit his recommendation, and, if approved, such change will be directed.

H. F. HODGES,
Acting Chairman and Chief Engineer.

No Hunting on Watershed of Reservoir.

CULEBRA, C. Z., March 1, 1911.

CIRCULAR No. 372:

Employes hunting on the watershed of any reservoir in the Canal Zone will be punished by suspension or discharge.

H. F. HODGES, *Acting Chairman.*

Classified Expenditures.

EMPIRE, C. Z., February 21, 1911.

CIRCULAR No. 29:

The following changes in classified expenditure accounts are authorized, effective January, 1, 1911:

370. *Miscellaneous General Expenses.*

C. Y. M. C. A. Clubhouses.

1. Operation.

To this account will be charged the salaries and expenses of officers and employes connected with clubhouses, also the expenses of furniture, fixtures, and supplies; and all other expenses paid by the Commission, except the cost of constructing, repairing, and furnishing new buildings.

2. Furnishing New Buildings.

To this account will be charged the initial cost of all furniture and fixtures for new clubhouse buildings which are payable from I. C. C. funds.

W. W. WARWICK,
Examiner of Accounts.

Approved: H. F. HODGES,
Acting Chairman and Chief Engineer.

Certificates for Injury.

ANCON, C. Z., January 23, 1911.

TO ALL CONCERNED:

Hereafter, in issuing certificates for injury cases, the physicians will pay no attention to that part of the certificate referring to fault, or no fault, as this question will be determined from the report of accident made out by the foreman at the time the employe is injured.

Under the head of "Remarks" on the certificates, the physician is directed to state the exact nature and extent of the injury in each case.

Respectfully,
JOHN L. PHILLIPS,
Assistant Chief Sanitary Officer.

ANCON, C. Z., February 27, 1911.

TO ALL CONCERNED:

Referring to circular from this office under date of January 23, 1911, directing that physicians in making out sick certificates, where employes are injured on the work, pay no attention to that part of the certificate reading "Through Fault," or "Through No Fault," which was to be covered by foreman's certificate, it was not intended to cover sick certificates through injury not received on the work, and where the injury would be covered by sick certificate in distinction from injury pay.

Physicians making out sick certificates in case of injury not received on the work will, after ascertaining the facts in the case, state whether it was through fault, or no fault.

By order of the Chief Sanitary Officer.

JOHN L. PHILLIPS,
Assistant Chief Sanitary Officer.

Steamer Cristobal to Be Repaired.

CULEBRA, C. Z., March 4, 1911.

HEADS OF DEPARTMENTS AND DIVISIONS:

The steamship *Cristobal* will be placed in drydock for repairs on arrival in New York after her next sailing from the Isthmus, about March 21, and no requests for reduced rate transportation for a later sailing will be issued until further notice.

By direction of the Chairman.

Respectfully,
C. A. MCILVAINE, *Chief Clerk.*

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal, Colon, and Balboa during the week ending March 4, 1911:

Clyde, February 26, from New York, with 9 reels wire cable for Pacific Division; 20 pieces steel channel, 200 cases washing powder.

Prinz Sigismund, February 27, from New York with 133 cases fuses for stock.

Pleiades, February 27, from San Francisco, with 29 packages fittings for Pacific Division.

Panama, March 1, from New York, with 8 cases tiles, 15 reels wire rope for Atlantic Division; 7 pieces castings, 4 cases castings, 72 packages concrete machinery for Central Division; 140 bundles brake shoes for Mechanical Division; 12 cases drugs and sundries for Sanitary Department; 38 crates iron valves, 200 cases toilet paper, 15 kegs wire nails, 11 cases hacksaw blades, 11 cases iron nuts, 65 bags Sucrene feed, 34 bundles handles, 100 kegs bolts for stock; and a miscellaneous cargo, the whole consisting of 809 packages, weighing 201 tons.

Turrialba, March 2, from New Orleans, with 63 bundles cypress shingles for Atlantic Division; 75 barrels sea coal facing for stock.

Metapan, March 2, from New York, with one 20-ton locomotive coaling crane for Pacific Division; 26 barrels drift bolts for stock.

Rainfall from February 1 to 28, 1911, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
*Chepo	.32	14	.32
Ancon	.71	15	2.75
Balboa	1.01	11	3.22
*Miraflores	1.30	11	2.43
Pedro Miguel	.78	11	1.40
Rio Grande	.35	11	.91
Central Section—			
Culebra	.37	11	.74
*Camacho	.36	12	.69
Empire	.21	11	.55
Gamboa	.19	12	.71
*Juan Mina	.90	12	1.39
Alhajuela	1.57	12	2.29
*El Vigia	1.13	12	3.19
*Gorgona	.65	6	1.99
San Pablo	.29	19	1.12
Tabernilla	.23	**	.99
Bohio	.24	24	1.87
*Trinidad	.28	5	2.00
*Monte Lirio	.61	26	2.41
Atlantic Section—			
Gatun	.41	14	2.19
*Brazos Brook	.40	5	2.03
Cristobal	.25	13	1.81
Porto Bello	4.00	12	6.90
*Nombre de Dios	.84	12	3.28
*Bocas del Toro	3.25	10	14.94

*Standard rain gage—readings at 5 p. m., daily. Automatic rain gage at unstarred stations—values midnight to midnight.

**12th and 14th.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending March 15, 1911, (75th meridian time):

DATE.	High.	Low.	High.	Low.	High.
	A. M.	A. M.	A. M.	P. M.	P. M.
March 9	......	4.00	10.05	4.30	10.35
March 10	......	5.13	11.30	5.55	......
			P. M.		
March 11	12.00	6.32	12.55	7.13	......
March 12	1.20	7.45	2.05	8.20	......
March 13	2.27	8.40	3.00	9.10	......
March 14	3.20	9.30	3.45	10.00	......
March 15	4.05	10.15	4.25	10.40	......

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line, the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Colon	P. R. R.	Tuesday	Mar. 7
Advance	P. R. R.	Monday	Mar. 13
Panama	P. R. R.	Saturday	Mar. 18
Allianca	P. R. R.	Friday	Mar. 24
Colon	P. R. R.	Friday	Mar. 31
Advance	P. R. R.	Thursday	Apr. 6
Panama	P. R. R.	Wednesday	Apr. 12
Allianca	P. R. R.	Tuesday	Apr. 18
Colon	P. R. R.	Monday	Apr. 24
Advance	P. R. R.	Saturday	Apr. 29

CRISTOBAL TO NEW YORK.

Allianca	P. R. R.	Monday	Mar. 13
Colon	P. R. R.	Sunday	Mar. 19
Advance	P. R. R.	Saturday	Mar. 25
Panama	P. R. R.	Friday	Mar. 31
Allianca	P. R. R.	Thursday	Apr. 6
Colon	P. R. R.	Wednesday	Apr. 12
Advance	P. R. R.	Tuesday	Apr. 18
Panama	P. R. R.	Tuesday	Apr 25
Allianca	P. R. R.	Monday	May 1
Colon	P. R. R.	Saturday	May 6
Advance	P. R. R.	Friday	May 12

NEW YORK TO COLON.

Zacapa	U. F. C.	Thursday	Mar. 2
Thames	R. M.	Saturday	Mar. 4
Sibiria	H.-A.	Saturday	Mar. 4
Almirante	U. F. C.	Thursday	Mar. 9
Prinz Aug. Wilhelm	H.-A.	Saturday	Mar. 11
Santa Marta	U. F. C.	Thursday	Mar. 16
Trent	R. M.	Saturday	Mar. 18
Metapan	U. F. C.	Thursday	Mar. 23
Prinz Joachim	H.-A.	Saturday	Mar. 25
Oruba	R. M.	Saturday	Apr. 1
Magdalena	R. M.	Saturday	Apr. 15

COLON TO NEW YORK.

Metapan	U. F. C.	Thursday	Mar. 9
Prinz Joachim	H.-A.	Tuesday	Mar. 14
Zacapa	U. F. C.	Thursday	Mar. 16
Oruba	R. M.	Tuesday	Mar. 21
Almirante	U. F. C.	Thursday	Mar. 23
Prinz Aug. Wilhelm	H.-A.	Tuesday	Mar. 28
Santa Marta	U. F. C.	Thursday	Mar. 30
Magdalena	R. M.	Tuesday	Apr. 4

NEW ORLEANS TO COLON.

Parismina	U. F. C.	Wednesday	Mar. 1
Abangarez	U. F. C.	Saturday	Mar. 4
Heredia	U. F. C.	Wednesday	Mar. 8
Atenas	U. F. C.	Saturday	Mar. 11
Cartago	U. F. C.	Wednesday	Mar. 15
Turrialba	U. F. C.	Saturday	Mar. 18

COLON TO NEW ORLEANS.

Turrialba	U. F. C.	Thursday	Mar. 9
Parismina	U. F. C.	Thursday	Mar. 9
Abangarez	U. F. C.	Thursday	Mar. 16
Heredia	U. F. C.	Thursday	Mar. 16
Atenas	U. F. C.	Thursday	Mar. 23
Cartago	U. F. C.	Thursday	Mar. 23

COLON TO BARBADOS, CALLING AT TRINIDAD.

Thames	R. M.	Tuesday	Mar. 14
Trent	R. M.	Tuesday	Mar. 28
Oruba	R. M.	Tuesday	Apr. 11
Magdalena	R. M.	Tuesday	Apr. 25

The next sailing of the Leyland Line will be as follows: *Colonian* on or about March 19, for New Orleans, via Kingston, Ja.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, March 4, 1911. All heights are in feet above mean sea level.

DATE AND DATE	STATION.				
	Vigia.	Alhajuala	Gamboa.	Bohio.	Gatun Lake.
Sun. Feb. 26	126.2	92.8	45.6	13.6	13.6
Mon. Feb. 27	126.3	92.8	45.6	13.5	13.5
Tues. Feb. 28	126.3	92.8	45.6	13.4	13.4
Wed. Mar. 1	126.1	92.8	45.3	13.4	13.4
Thurs. Mar. 2	126.2	92.7	45.3	13.3	13.3
Fri. Mar. 3	126.2	92.8	45.3	13.2	13.2
Sat. Mar. 4	126.0	92.6	45.2	13.2	13.2
Height of low water	125.0	92.0	45.0		

CANAL RECORD

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Address all Communications
THE CANAL RECORD
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Highest Daily Excavation.

All daily records for excavation in the Central Division were broken on Saturday, March 11, when the total amount of material excavated within the limits of the Central Division aggregated 80.341 cubic yards. Of this amount, 79.484 cubic yards were removed by 51 steam shovels and two orange peel cranes, the latter excavating 1,191 cubic yards of material from the Canal prism. The following amounts of material were removed from the different sections of the Central Division:

In the Chagres construction district, nine steam shovels of the 100-class and two orange peel cranes excavated 13,331 cubic yards of material.

In the Empire construction district, 20 shovels excavated 27,374 cubic yards of material, principally rock.

In the Culebra construction district, 21 shovels excavated 37,639 cubic yards of rock and earth.

In the Pedro Miguel construction district, one shovel excavated 1,140 cubic yards of rock.

In addition to the amounts already mentioned, there were excavated by hand work 482 cubic yards, and by scraper 375 cubic yards.

Of the total amount excavated on March 11th, 79,206 cubic yards were removed from the Canal prism, 1.105 cubic yards from the Obispo diversion, and 30 cubic yards from outside work.

Previous to the beginning of the present month, the highest daily record was made on April 8, 1909, on which date the total excavation within the limits of the Central Division aggregated 78,559 cubic yards. At this time, however, Lidgerwood flat cars were credited with a capacity of 20 cubic yards, place measurement, while at the present time they are counted as containing but 19 cubic yards, place measurement, although they are loaded as heavily as in 1909. Had figures now used for the contents of Lidgerwood cars been applied to the excavation of April 8, 1909, the output for the day would have aggregated 76,253 cubic yards, instead of 78,559 cubic yards, as was then reported, or about 4,000 cubic yards less than the total excavation of March 11, 1911.

Canal Fortifications.

An initial expenditure of $3,000,000 for the fortification of the Panama Canal is authorized in the Sundry Civil Act approved on March 4, 1911, in the following terms:

> "For construction of seacoast batteries on the Canal Zone, two million dollars.
>
> "For the purchase, manufacture and test of seacoast cannon for coast defense, including their carriages, sights, implements, equipments, and the machinery necessary for the manufacture at the arsenals, to cost ultimately not to exceed one million nine hundred and sixty thousand dollars, one million dollars, the same to be immediately available and to continue available until expended."

By recommendation of the Panama Fortification Board, the work on the Isthmus will be done under the direction of the Isthmian Canal Commission. The original estimate for this purpose was $14,104,203, and was published in THE CANAL RECORD of May 18, 1910. The estimate sent to Congress on November 1, 1910, provided for an appropriation of $19,546,843. A report of the fortification board of January 4, 1911, reduces the amount to be appropriated to $12,475,328.

The estimates on which the initial appropriation was made recommended seacoast armament for the defense of the Canal against naval attack by 14-inch rifles, 6-inch rifles, and 12-inch mortars.

Excavation Along Chagres River.

Excavation in the section of the Canal along the Chagres river between Gatun and Culebra Cut is within 600,000 cubic yards of completion, and, by the middle of next month all work that the Central Division forces can do during the present year will have been completed. There yet remain 178,000 cubic yards at Bohio, which is to be sluiced by a contractor, 6,000 cubic yards in the right-of-way of the Panama railroad at Bohio, 253,000 cubic yards at San Pablo, 20,000 at Tabernilla, 126,000 at Gorgona on which a contractor is now working, and the small quantity at Gorgona which the Central Division will finish by April 10.

The 6,000 yards at Bohio, and the 253,000 at San Pablo, will not be excavated until the present line of the Panama railroad is abandoned for the relocation, because the work would interfere with traffic. Sluicing at Bohio is about to begin; the steam shovel work at Tabernilla is almost finished, and the contract excavation at Gorgona is under way. The contractor on this piece of work has erected two steam-driven centrifugal pumps, which draw water from the river and force it through pipe to any part of the excavation desired. It is proposed to erect a movable sluice box into which the earth excavated will be dumped, to be carried by the water into the river.

The Central Division has an economical dump at Gorgona by means of which the Chagres is utilized. It is a trestle across the river upon which the spoil trains are run and dumped, the water carrying the material away. Five thousand cubic yards a day have been dumped over this trestle six days a week for the past six weeks, and the river has cleared it all away. The river bottom has been raised from 10 to 15 feet by this process, and, in consequence, a deep pond has been formed above the trestle. The water thus impounded escapes through a narrow channel under a head of five feet, or more, and sluices the dump as rapidly as the cars are unloaded.

The work at Mamei is finished, except for a small quantity of hand excavation and the removal of the old French dredge, both of which are in progress.

Empire-Chorrera Highway.

A survey, preliminary to the construction of a Zone highway from the village of Empire to the Canal Zone boundary three miles north of Arraijan, following for some distance the route of the present Empire-Chorrera trail, has been authorized. Trails from Miraflores, Pedro Miguel, Paraiso, Culebra, and Empire converge just inside the Zone line and enter Arraijan, a native town situated about one-eighth of a mile from the Panama side of the boundary. The trail from Pedro Miguel was considerably used at one time, and, in 1906, the Canal Zone Government had it widened and cleared. Lock construction at Pedro Miguel blocked the entrance to that village, and it is now much less used than formerly, and has again become choked with vegetation.

From Empire to Arraijan the trail traverses one of the best agricultural sections in the Canal Zone, and a large amount of fruit and produce is brought over it by pack horse and marketed in Empire. During the rainy season parts of this trail become almost impassable, due to the mud and the lack of bridges over the two or three streams that have to be crossed, thus interrupting traffic for days at a time. The proposed road will be about six and one-half miles in length, and while it will pass Arraijan considerably to the north, a fairly good trail will lead from it to the village. Prison labor will be utilized. There is a good wagon road extending west of Empire to the old rock quarry, a distance of about a mile from the railroad station. Near the quarry the Chorrera trail diverges and crosses the first range of hills through a steep and narrow pass, which, in wet weather, is muddy and badly washed out. The survey contemplates avoiding this pass altogether, and the ascent of the range where an easier grade can be established. The new road will probably be 16 feet in width, will conform closely to the

NOTES OF PROGRESS.

(*Continued.*)

recommendations of the committee on standard road construction in the Canal Zone, and will be built under the direction of the municipal engineer of the Central Division. Temporary improvements, consisting of fills in low places, and of creosoted plank bridges across ravines and gullies, have recently been made along the trail.

From the Zone line to Chorrera, a distance of eight or nine miles, the trail runs in a southwesterly direction. The Panama Government has given assurance that it will continue the highway built to the Zone line into Chorrera, thereby making this entire section of country accessible to Empire. Chorrera is a native village of about 3,500 inhabitants, situated near the Chorrera River, and about four miles from the falls, which are the largest in this part of the Isthmus. There are many farms of considerable extent in that section on which cattle are raised, and corn and other produce grown.

Gatun Spillway.

Concrete was placed in the spillway of Gatun Dam during the week ending March 11, as follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
March 6	154	13:00	2
March 7	294	15:00	2
March 8	330	17:00	2
March 9	286	15:00	2
March 10	318	17:00	2
March 11	360	17:00	2
Total	1,742	94:00	2
Previously reported	122,644		
Grand total	124,386		

Changes at East Balboa Electric Plant.

The installation of a 500-kilowatt, low pressure, turbo-generator, to displace all of the present electrical generating equipment at the power and air compressor plant, near East Balboa, has been authorized. The main engine shaft at the plant broke on January 1, placing the larger of the two alternating current generators out of commission, and curtailing the production of current for lighting purposes. Since then, the Pacific Division plant at Miraflores has been carrying part of the night load. The East Balboa plant has been supplying alternating current for day and night lighting in Ancon, Balboa, and East Balboa, and direct current for the operation of the cranes on the Panama railroad wharf and for the motors in the Pacific Division machine shop at Balboa. The new generator will be of the 2200-volt, 3-phase, 25-cycle type, and its installation will necessitate the substitution of the present direct current motors on the wharf, and in the machine shop, with 220-volt, 3-phase, 25-cycle motors.

The committee, who had the matter in charge, considered the feasibility of furnishing all current in the area between Balboa and Pedro Miguel from the Miraflores plant, but the determination was reached that the latter could not safely assume the extra day load without danger of interruption to the work in the Pacific Division. Under the new arrangement, the Balboa and Miraflores plants will be operated in parallel; the Balboa plant will carry its present day load, operating under power furnished by the exhaust steam of the air compressors, which will not only constitute a fuel economy, but will obviate any necessity for additional boiler capacity; while the Miraflores plant will assume the night load. In addition to the electric current required at Balboa during the day, there is sufficient energy in the exhaust steam to furnish from 100 to 200 kilowatts to the system now operated by the Miraflores plant.

It was also recommended that the present circulating water system for the condenser at the Balboa plant be retained, but that a motor-driven centrifugal pump, available on the Isthmus, be substituted for the nonexpansive circulating pump now in use. This arrangement contemplates the continuance of the pool and spray system for reducing the temperature of the circulating water in the condenser, now standing at about 83 degrees Fahrenheit.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

About 57 per cent of the concrete for the system of three twin locks at Gatun has been laid, the exact amount in place at the close of work on March 11, being 1,180,640¾ cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending March 11, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily. and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
March 6	2,146	43:08	6	514	8:40	2	123½	2,783½
March 7	2,592	45:50	6	854	9:40	2	267¾	3,713¾
March 8	2,622	42:29	6	670	8:40	2	296¾	3,588¾
March 9	2,642	43:36	6	786	8:40	2	256¼	3,684¼
March 10	2,148	38:29	7	498	7:40	2	262¾	2,908¾
March 11	1,916	31:10	6	694	8:40	2	219¼	2,829¼
*Portable mixers				380				380
Total	14,066	244:42	6.17	4,396	52:00	2	1,426¼	19,888¼
Previously reported								1,160,752½
Grand total								1,180,640¾

*The 380 yards shown for the portable mixers were reinforced concrete, and were placed on the following days: March 6th, 77½ yards; March 7th, 68½ yards; March 8th, 51 yards; March 9th, 45½ yards; March 10th, 67½ yards; March 11th, 70 yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is over 68 per cent completed, 575,717 cubic yards, out of a total of 837,400, having been placed at the close of work on March 11. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. ½-cubic yard mixer.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete Placed.	Hours worked.	No of mixers.		
	Cu. Yds.			Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
March 6	1,252	16:00	2	832	21:00	3	15	:75	1		2,099
March 7	828	12:00	2	666	17:50	3	77	4:50	1		1,571
March 8	958	14:00	2	688	16:50	3	125	8:00	1		1,771
March 9	946	14:00	2	526	11:50	3	129	8:00	1		1,601
March 10	826	14:00	2	420	9:50	2	127	8:00	1		1,373
March 11	1,058	16:00	2	580	14:50	3	117	8:50	1		1,755
Total	5,868	86:00	2	3,712	90:50	2.83	590	37:75	1		10,170
Previously reported										4,178	565,547
Grand total										4,178	575,717

MIRAFLORES LOCKS.

Over 11 per cent of the concrete for the system of locks at Miraflores was in place on March 11, the total amount on that date being 152,286 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	AUXILIARY PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. ½-cubic yard mixers.			AUXILIARY PLANT. ½-cubic yard mixer.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
March 6	316	7:33	2	498	33:50	5	63	4:75	1		887
March 7	304	7:00	2	619	34:75	5	82	6:50	1	7	1,026
March 8	312	6:83	2	700	41:25	5	72	5:00	1	25	1,115
March 9	292	6:00	2	691	35:00	5	85	7:00	1	10	1.093
March 10	302	6:50	2	508	23:33	5	57	4:50	1	15	910
March 11	240	5:50	2	650	33:00	5	92	7:00	1	20	1,012
Total	1,766	39:16	2	3,666	200:83	5	451	34:75	1	77	*6,043
Previously reported										3,533	146,243
Grand total										3,610	152.286

*At Miraflores, the amount of concrete laid by hand, which is included in the total for each day was, as follows; March 6th, 10 yards; March 7th, 14 yards; March 8th, 6 yards; March 9th, 15 yards; March 10th, 28 yards: March 11th, 10 yards; total, 83 yards.

STEAM SHOVEL RECORDS.

Central Division and Relocation Work.

During the month of February the total amount of material excavated in the Central Division was 1,630,758 cubic yards, of which 477,477 cubic yards were classified as earth, and 1,153,281 cubic yards as rock. Of this quantity, 1,600,597 cubic yards were removed by steam shovels, 5,096 cubic yards by scraper, 16,699 cubic yards by bucket cranes, and 870 cubic yards by hand. Contractors removed 4,304 cubic yards by sluicing, and 3,192 cubic yards by hand.

The high record for the month was made by shovel No. 256, working 23 days in the Culebra district, which excavated 57,754 cubic yards of rock. The second best record for the month was made by shovel No. 206, working 23 days in the Culebra district, which excavated 55,695 cubic yards of rock.

The best record for a shovel of the 70-ton class was made by shovel No. 109, working 21 days in the Culebra district, which excavated 34,193 cubic yards of earth.

Shovel No. 201, working in the Empire district, made a high record for one day by excavating 3,249 cubic yards of rock on February 9. Shovel No. 126, working in the Chagres district, excavated 2,820 cubic yards of earth on February 21, and this is the high record for one day for a shovel of the 70-ton class, during the month.

Except where noted, monthly reports are computed by place measurement, while the daily reports are based on car measurement. The best records for the month, and for one day, are shown below:

BEST RECORDS FOR THE MONTH.

Shovel No.	Cubic Yards. Earth.	Rock.	Total.	No. of days at work.
CHAGRES DISTRICT.				
126	26,088	....	26,088	19
108	24,350	....	24,350	21
EMPIRE DISTRICT.				
201	....	47,928	47,928	23
263	8,710	34,842	43,552	23
221	....	40,432	40,432	23
CULEBRA DISTRICT.				
256	....	57,754	57,754	23
206	....	55,695	55,695	23
208	....	52,761	52,761	23
PEDRO MIGUEL.				
231	8,000	21,786	29,786	22

BEST RECORDS FOR ONE DAY.

Shovel.	Location.	Date.	Character of material excavated.	Cubic yards.
126	Chagres*	Feb. 21	Earth	2,820
115	Chagres*	Feb. 27	Earth	1,840
122	Chagres*	Feb. 1	Earth	1,840
201	Empire	Feb. 9	Rock	3,249
226	Empire	Feb. 24	Rock	2,375
263	Empire	Feb. 27	Rock	2,365
263	Empire	Feb. 28	Rock	2,278
263	Empire	Feb. 23	Rock	2,226
228	Empire	Feb. 18	Rock	2,109
205	Culebra	Feb. 10	Rock and earth	2,942
205	Culebra	Feb. 11	Rock and earth	3,095
206	Culebra	Feb. 21	Rock and earth	3,120
256	Culebra	Feb. 11	Rock and earth	3,192
256	Culebra	Feb. 18	Rock and earth	2,945
256	Culebra	Feb. 20	Rock	3,059
231	Pedro Miguel.	Feb. 1	Rock	2,508
231	Pedro Miguel.	Feb. 3	Rock	2,413
231	Pedro Miguel.	Feb. 2	Rock	2,356
231	Pedro Miguel.	Feb. 8	Rock	2,280

*70-ton class.

Relocated Line, P. R. R.

The total excavation on the relocation of the Panama railroad for the month of February was 320,238 cubic yards, of which 129,428 cubic yards were earth, 3,020 cubic yards loose rock, and 186,790 cubic yards solid rock.

Six steam shovels on the Gatun-Monte Lirio section removed 252,815 cubic yards.

On the Gold Hill section, a total of 67,423 cubic yards were excavated, 40,648 cubic yards by pan car task work, 20,720 cubic yards by contract, also done by pan cars, and 3,800 cubic yards by steam shovel.

The best record was made by steam shovel No. 257, working south of Gatun, which excavated 1,345 cubic yards of earth and 57,550 cubic yards of rock, a total of 58,895 cubic yards in 23 working days.

The best record for a 70-ton shovel was made by steam shovel No. 117, also working on the Gatun section, which excavated 1,000 cubic yards of earth and 38,990 cubic yards of rock, a total of 39,990 cubic yards in 23 working days.

The best day's record for shovels with 5-yard dippers was made by steam shovel No. 257, which excavated 3,360 cubic yards of rock on February 18. This shovel excavated 3,350 cubic yards on February 17, which was the second best record. On February 2, steam shovel No. 262 excavated 3,260 cubic yards of rock.

In the 70-ton class, the best day's record was 2,190 cubic yards of earth and rock, excavated by steam shovel No. 121, on February 28.

BEST RECORDS FOR THE MONTH.

Shovel No.	Cubic Yards by Cross Section. Days worked.	Earth	Rock.	Total.
257	23	1,345	57,550	58,895
262	23	20,670	33,250	53,920
117	23	1,000	38,990	39,990

Total output during the month of February, 1911, 256,615 cubic yards.

Total number of steam shovel working days, 143.

Average output per working day, 1,795 cubic yards.

I. B. of S. S. and D. M.

Local No. 19 of the International Brotherhood of Steam Shovel and Dredge Men will hold its regular meeting on Sunday, March 19, at the I. C. C. lodge hall, Empire, at 12.15 p. m. All brotherhood men are requested to attend this meeting.

WALTER P. TUDOR, *Secretary and Treasurer.*

Empire,, C. Z., March 10, 1911.

PERFORMANCE OF TRACK SHIFTERS.

A statement of work performed by the nine track shifters in the Canal service during the months of October and November, 1910, has been prepared showing: (1) Time consumed. (2) Working efficiency of each machine based on an arbitrary amount of 10,000 feet of track shifted per day. (3) Per cent of time actually worked. A summary of performances for these two months shows that the five track shifters in the Central Division had an average efficiency of 63.5 per cent, and the per cent of time used 46.5. In the Atlantic Division, with two shifters, the average efficiency was 24.5 per cent, and the per cent of time used 62. In the Pacific Division, with two machines, the average efficiency was nine-tenths of one per cent, and the per cent of time used three and four-tenths. The low efficiency in the Pacific Division is due principally to the light demand on the services of the shifters, which, however, will be considerably augmented when the dry excavation work in the lower lock at Miraflores is fully under way. The statement, in detail, follows;

OCTOBER, 1910.

DIVISION.	Location.	Track shifted. (Feet.)	Time consumed. (Hours.)†	In shop. (Days)	Per cent of efficiency.*	Per cent time worked.
Pacific—						
No. 3	Pedro Miguel and Miraflores	700	3	....	.30	1.50
No. 10	Pedro Miguel and Miraflores	4,000	17	....	1.60	8.00
	Total	4,700	20	....	.94	5.00
Central—						
No. 2	Balboa	147,353	72	....	60.00	34.00
No. 5	Tabernilla	147,005	91	....	60.00	45.00
No. 6	In shop	....	....	31	....	....
No. 7	Gamboa	247,480	140	....	99.00	68.00
No. 8	Miraflores	125,260	106	....	50.00	54.00
	Total	667,098	409	31	66.00	50.00
Atlantic—						
No. 1	Gatun Dam (south toe)	47,520	65	8	20.00	43.00
No. 4	Gatun Dam (north toe)	60,720	152	....	25.00	75.00
	Total	108,240	217	8	22.00	64.00

NOVEMBER, 1910.

DIVISION.	Location.	Track shifted. (Feet.)	Time consumed. (Hours.)†	In shop. (Days)	Per cent of efficiency.*	Per cent time worked.
Pacific—						
No. 3	Miraflores	1,300	2	....	.50	1.00
No. 10	Miraflores	3,000	6	....	1.20	3.00
	Total	4,300	8	....	.85	2.00
Central—						
No. 2	Balboa	171,000	86	1	70.00	45.00
No. 5	Tabernilla	67,100	42	....	27.00	24.00
No. 6	Balboa	2,000	3	28	.80	1.50
No. 7	Gamboa	265,375	101	....	100.00	53.00
No. 8	Miraflores	110,745	108	....	44.00	57.00
	Total	616,220	340	29	61.00	43.00
Atlantic—						
No. 1	Gatun Dam (south toe)	60,720	85	....	25.00	44.00
No. 4	Gatun Dam (north toe)	74,448	141	....	30.00	74.00
	Total	135,168	226	....	27.00	60.00

*Based on 10,000 feet per day, or 250,000 feet per month.

†Based on 208 nours for October and 192 hours for November. In October, there were 26 working days, and in November, there were 24.

SOCIAL LIFE OF THE ZONE.

Women's Clubs.

At the meeting of the executive board of the Cristobal Woman's Club held on Wednesday morning, March 8, the resignation of Mrs. F. C. Crummett as treasurer was accepted, and Mrs. Fred Guderian was appointed in her place. The program at the meeting of the home department on Wednesday afternoon, March 8, consisted of papers on the business side of housekeeping. The home department will close the year's program, with papers on the poets, on April 12. The annual meeting and election of officers will be held on April 26.

The president of the Canal Zone Federation was the guest of the Paraiso Woman's Club on Wednesday, March 8, and spoke on "Child welfare."

The Gatun Woman's Club will hold its quarterly election of officers on March 31. At this meeting, papers on public health will be read, and the program will close with a drill in parliamentary law.

An exhibit of the federation pictures will be held by the Gorgona Woman's Club at the residence of Mrs. B. F. Henckle, house No. 83, beginning on Wednesday afternoon, March 16, and continuing until Friday evening, March 17. The exhibit will be open to all residents of Gorgona.

The next meeting of the Empire Woman's Club will be held at the home of Mrs. J. H. Westberg on Thursday, March 16. A number of women from Las Cascadas have joined the club. Mrs. C. R. Lingo has been appointed in charge of the current events program for each meeting.

Church Work.

A meeting of those interested in missionary work on the Isthmus will be held at the Gorgona chapel on Wednesday afternoon, March 22, under the direction of Mrs. J. Leon Webster, representative for the Canal Zone of the Woman's Foreign Missionary Society of the Methodist Episcopal Church. Mrs. W. W. Gray will deliver an address.

The Salvation Army has opened a barrack at Gatun, and has also extended its work along the coast, by establishing branches at Port Limon and Bocas del Toro. On Sunday, February 11, Colonel Maidment, commander for the West Indies, British Guiana, and Panama, paid a visit of inspection to the institute in Colon, when a conference of the heads of the divisions in the Canal Zone was held. Since the beginning of the year, Adjutant George Catlin, and Mrs. Catlin, of England, have been in charge of the social institute at Colon and the work on the Isthmus.

Secret Societies.

A meeting of those interested in the organization of a Canal Zone chapter of the Order of the Eastern Star will be held at the lodge hall in Gorgona on Sunday, March 19, at 2.30 p. m..

At the recent dance held by the Pythian Sisters in the lodge hall at Las Cascadas for the benefit of the Pythian sanitorium at Las Vegas, N. M., the receipts were $100.

Lawn Tennis.

At the tournament in singles held by the Isthmian Tennis Association at Empire on March 5, the following was the result: Preliminaries—Stokes, Empire, defeated Deane, Panama, 6–4, 6–3; Ross, Tivoli, defeated Rogers, Culebra, 6–1, 6–2; Dryden, Cristobal, defeated Wells, Gatun, 6–4, 6–4.

Semifinals—Stokes defeated Rogers, 4–6, 6–3, 6–4; Ross defeated Dryden, 6–3, 6–2.

Finals—Ross defeated Stokes, 8–6, 8–6.

The next tournament of the association will be held in doubles at Panama on April 2. The winning club of this tournament will become the custodian of the Maduro-Lupi cup for the season of 1911.

W. M. Wood of Empire, will be pleased to hear from members of tennis clubs on the Isthmus, who have passed their fortieth birthday, and are interested in a tournament, with suggestions as to time, date, place, rules, etc.

Colon Humane Society.

A meeting of the Colon Humane Society was held at the government palace on Tuesday evening, March 7, at which a committee was appointed to investigate the condition of the animals in the Panama railroad corral, and to decide upon the question of the appointment of a veterinary, who will look over and examine each animal once a month. A food inspector for Colon was appointed.

Public Schools.

The students and faculty of the Canal Zone High School entertained their friends and patrons at the school on Friday afternoon, March 10, when Col. W. C. Gorgas delivered an address on sanitation. A violin solo was played by Miss Maria Elise Johnson, and a piano solo by Arthur Vickery; and school songs were sung. At the close there was an informal reception at which refreshments were served by the school.

The second number of the Canal Zone High School periodical, *The Zonian*, has been issued. It is in magazine form, and contains stories, essays, and verses by the students. Class and athletic notes form special features, and a new department has been introduced containing letters from former students. The paper has been placed on sale throughout the Canal Zone, and the proceeds will be devoted to the piano fund. A "Commencement" issue of *The Zonian* will be brought out at the close of the school year.

Observance of St. Patrick's Day.

The Cristobal Catholic Club will hold a banquet at the Cristobal hotel on Saturday evening, March 18, in commemoration of St. Patrick, the patron saint of Ireland. The members of the Isthmian Canal Commission, and the officials of Panama, have been invited to attend. The Marine Band has been engaged to furnish music for the occasion. A special train will be run on that evening, leaving Panama at 5.45 o'clock and stopping at the various stations along the line, returning after the banquet.

Missing Men.

Any one having information regarding the present whereabouts of James Francis Quinn, who left the service of the Commission in June of last year, is requested to communicate with his brother, Joseph S. Quinn, 233 West 148th street, New York City.

Any one having information regarding the whereabouts of Harvey E. Diehl, who is supposed to be on the Isthmus, is requested to communicate with Mr. William N. Diehl, 408 Seaboard Bank Building, Norfolk, Va.

Any one having information regarding the following men, who are supposed to be on the Isthmus, are requested to communicate with The Canal Record: E. E. White, Patrick Carroll, J. L. Barnes, Patrick Kane, and Herbert Howe.

Any one having information regarding the whereabouts of Lester Tarplay, supposed to have come to the Isthmus from New Orleans during the latter part of 1910, is requested to communicate with W. S. Standifer, Bohio.

Any one having information regarding the whereabouts of H. Eugene Stribling, who is supposed to have come to the Isthmus, is requested to communicate with Geo. L. King, Porto Bello.

A Dime Savings Bank for West Indians.

A dime savings bank has recently been opened in connection with Christ Church, Colon, for the purpose of teaching and encouraging thrift among the West Indians of the parish. The business is operated by a manager, the rector of the church, a board of trustees, and a board of directors. Deposits are received once a week, and each person is allowed to deposit any sum between ten cents and one dollar. When a depositor has $25 in the bank, the amount will be transferred and placed at interest with one of the banking companies of the city of Colon. The number of depositors is already large.

Obituary.

Mrs. E. B. Clark, wife of E. B. Clark of Gatun, died at Ancon Hospital on March 5, after an illness covering three days. She was born in Mississippi twenty-two years ago, and had been on the Isthmus for several years.

Mrs. Lillie Gibson, wife of Capt. J. K. Gibson, living at Cristobal, died at Colon Hospital on March 13. She was 32 years of age, born in Belfast, Ireland, and had been on the Isthmus four years.

Mrs. Daniel J. McGraw, wife of Daniel J. McGraw, living at Pedro Miguel, died at Ancon Hospital on March 10. She was 27 years of age, born in Indiana, and had been on the Isthmus about three and a half years.

Mrs. Margaret Callahan, mother-in-law of H. Snyder, living at Empire, died at Ancon Hospital on March 12. She was 81 years of age, born in Cornwall, Ontario, Canada, and had been on the Isthmus nine months.

Spanish War Veterans.

Chagres Camp, No. 2, U. S. W. V., will hold its next meeting on Sunday, March 19, at 3 p. m., in Culebra lodge hall. All members of the order are invited to attend, and prospective members are also invited to be present at that time.

B. P. O. E.

Elks in good standing will meet at Hotel Imperial, Colon, on Sunday, March 19, at 10 a. m. All Elks are requested to attend.

Modern Woodmen.

All members of the Modern Woodmen of America who wish to form a Good Fellowship Camp on the Isthmus, are requested to communicate with W. W. Darling, Gorgona, C. Z.

At a meeting of Panama Council, No. 1371, Knights of Columbus, on March 12, resolutions of sympathy for D. J. McGraw were adopted on the death of his wife.

A special meeting of the Panama Canal Service Medal Association will be held at the Gatun lodge hall on Sunday, March 19, at 2 p. m.

FUNDS FOR CANAL WORK.

Appropriation for 1912, and Total of Appropriations for Past Years.

Provision for carrying on the Canal work during the fiscal year beginning July 1, 1912, was made by Congress in the Sundry Civil Act of March 4, 1911. The appropriation amounts to $45,560,000, divided into the following items:

Salaries of officers and employes in the United States	$130,000
Incidental expenses in the United States	50,000
Salaries of Commission, officers, employes on the Isthmus, other than skilled and unskilled labor, in the Departments of Construction and Engineering, Quartermaster's, Subsistence, Disbursements, and Examination of Accounts	3,900,000
Skilled and unskilled labor on the Isthmus in the Departments of Construction and Engineering, Quartermaster's, Subsistence, Disbursements, and Examination of Accounts	16,500,000
Materials, supplies, and equipment, and other expenses not in the United States for the Departments of Construction and Engineering, Quartermaster's, Subsistence, Dishursements, and Examination of Accounts	19,000,000
Miscellaneous expenditures, recruiting laborers, transporting lahorers and other employes, and expenses not otherwise provided for in the Departments of Construction and Engineering, Quartermaster's, Subsistence, Disbursements, and Examination of Accounts	950,000
Salaries of officers and employes, other than skilled and unskilled laborers, Department of Civil Administration	550,000
Skilled and unskilled labor, Department of Civil Administration	20,000
Materials, supplies, etc., and contingent expenses, Department of Civil Administration	110,000
Salaries of officers and employes, other than skilled and unskilled laborers, Department of Sanitation	600,000
Skilled and unskilled labor, Department of Sanitation	200,000
Materials, supplies, etc., and contingent expenses, Department of Sanitation	800,000
Relocation of Panama railroad	2,750,000
Total	$45,560,000

The entire appropriation is available until expended; ten per cent of each item may be used interchangeably, but not more than 10 per cent added to any one item.

The provisions of the appropriation act for the fiscal year 1911, directing that expenditures shall be paid from the proceeds of the sale of Canal bonds, and that no part of the appropriation shall be applied to the payment of allowances for longevity services or lay over days accruing after July 1, 1909, are retained. There are inserted the following new clauses:

"Except in cases of emergency, or conditions arising subsequent to and unforeseen at the time of the passage of this Act, there shall not be employed at any time during the fiscal year 1912, under any of the foregoing appropriations for the Isthmian Canal, any greater number of persons than are specified in the notes submitted respectively in connection with the estimates for each of said appropriations in the annual book of estimates for said year, nor shall there be paid to any of such persons during that fiscal year any greater rate of compensation than was authorized to be paid to persons occupying the same or like positions on the first day of July, 1910, and all employments made or compensation increased because of emergencies or conditions so arising shall be specifically set forth, with the reasons therefor, by the Chairman of the Commission in his report for the fiscal year 1912.

"Hereafter, the Panama Railroad Company shall carry no insurance to cover marine or fire losses, nor make any further payment on the principal or interest on notes heretofore given by it to the United States for moneys appropriated for its use.

"That until the close of the fiscal year 1912, when any material, supplies, and equipment heretofore or hereafter purchased or acquired for the construction of the Isthmian Canal is no longer needed, or is no longer serviceable, it may be sold in such manner as the Secretary of War may direct, and without advertising in such classes of cases as may be authorized by him.

"That hereafter, the Act granting to certain employes of the United States the right to receive from it compensation for injuries sustained in the course of their employment shall apply to all employes under the Isthmian Canal Commission, when injured in the course of their employment; and claims for compensation on account of injury or death resulting from an accident occurring hereafter shall be settled by the Chairman of the Isthmian Canal Commission, who shall, as to such claims and under such regulations as he may prescribe, perform all the duties now devolving upon the Secretary of Commerce and Labor: *Provided*, That when an injury results in death, claim for compensation on account thereof shall be filed within one year after such death.

"Hereafter, the Panama Railroad Company shall not be required to give bond, either with or without surety, in contracts which it may make to furnish services, materials, or supplies to the Army, Navy, Marine Corps, or other departments of the Government, and such contracts may be made for periods less than one year, as may be agreed on, and formal contracts in writing shall not be required unless agreed on."

A statement follows showing the appropriations by Congress for the Isthmian Canal, separated by the different Acts, and showing the total amount appropriated:

ACT OF CONGRESS APPROVED.	Appropriation.	Deficiency.
June 28, 1902	*$40,000,000.00	
May 28, 1904	†10,000,000.00	
June 28, 1902	10,000,000.00	
December 21, 1905	11,000,000.00	
February 27, 1906		$5,990,786
June 30, 1906	25,456,415.08	
March 4, 1907	27,161,367.50	
February 15, 1908		12,178,900
May 27, 1908	29,187,000.00	
March 4, 1909		5,458,000
March 4, 1909	33,638,000.00	
February 25, 1910		76,000
June 25, 1910	37,855,000.00	
June 17, 1910	‡1,200.00	
January 13, 1911	‡1,500.00	
February 13, 1911	‡1,704.18	
March 4, 1911	45,560,000.00	
Total	$269,862,186.76	$23,703,686
Deficiency	23,703,686.00	
Grand total	$293,565,872.76	

*For purchase of Canal rights from the French.
†For purchase of Canal Zone rights.
‡Special acts, relief of private persons.

Work at Gorgona Shops.

A railroad inspection car driven by a gasoline engine and capable of accommodating five passengers, in addition to the operator and two other persons on the front seat, is nearing completion at the Gorgona shops. The underframe is of steel and the body is of steel plate welded by the oxy-acetylene process. The length over all is 15 feet, and the length of the body nine feet. The car is similar to the inspection cars purchased in the States, excepting that the power transmission is by means of friction discs.

A lifting magnet has been attached to a 25-ton locomotive traveling crane for the purpose of handling scrap at the shops more expeditiously, and with greater economy, than by the old process of loading it in dumping buckets. The motor generator set, with which the crane has been equipped, generates a current of 220 volts, eight kilowatts. The lifting magnet has a diameter of 52 inches, and is suitable for handling steel, angle iron, scrap, and pig iron. In a recent test the crane handled 30 tons of pig iron from piles to cars in 45 minutes, only one man being engaged in the operation. A similar amount of material, loaded by means of dumping buckets and a crane, formerly required half a day and 15 men.

Postal Business and Canal Zone Revenues.

The report of the Director of Posts for the month of February shows that 17,431 money orders were issued, amounting to $445,186.72. Of this amount, $340,013.03 was issued payable in the United States, $104,585.19 in orders payable in the Canal Zone, and $588.50 in orders payable in Martinique. The fees collected amounted to $1,946.26, and the amount paid and repaid during the month was $94,180.34.

Postal sales during the month amounted to $6,599.80, and newspaper postage amounted to $3.61.

The revenue collections for the month were, as follows:

Distillation licenses	$ 68.16
Insurance company fees	281.99
Motor vehicle licenses	111.00
Taxes, licenses, etc	7,490.55
Total	$7,951.70

Civil Service Examinations.

The following examinations are scheduled to be held in the near future. Request for blank application form should be made as early as possible, stating the position for which it is desired to apply.

Mechanical draftsman, topographic draftsman, physician, postal clerk, and trained nurse, in the Isthmian Canal Service; physician, and trained nurse, in the Indian and Philippine services. Women will be admitted to examination for trained nurse in all services.

It is to be noted that for examinations for appointment to the Isthmian Canal or Philippine services it is not required that the vouchers in an application be executed by persons who are residents, either *bona fide*, or bodily, of the State or Territory claimed by the applicant as *bona fide* residence.

JOHN K. BAXTER,
Secretary, Isthmian Civil Service Board.
Culebra, C. Z., March 10, 1911.

Porto Bello Crusher.

A statement of the work done at the Porto Bello crusher, by days, for the week ending March 11, follows:

DATE.	Hours worked.	Cubic Yards.
March 6	5:56	2,647
March 7	7:04	3,600
March 8	6:30	3,329
March 9	7:01	3,395
March 10	6:59	3,427
March 11	7:02	3,230
Total	40:32	19,628

Ancon Rock Crusher.

A statement of rock crushed at Ancon quarry during the week ending March 11, follows:

DATE.	Hours worked.	Cubic Yards.
March 6	9:50	3,175
March 7	7:50	3,074
March 8	10:35	3,034
March 9	8:25	2,583
March 10	9:50	2,737
March 11	10:30	2,761
Total	57.00	17,364

Fatal Accident at Toro Point.

John H. Hobrough, an American employed as a machinist by the Atlantic Division at Toro Point, was fatally injured by the explosion of a tire heater while engaged in making repairs to engine No. 105, about 10 p. m. on Monday, March 13. He was born in St. Paul, Minn., but had lived at Everett, Washington, prior to his appointment in the Isthmian service on November 16, 1910. He was 23 years of age, and unmarried.

BASEBALL.

PANAMA CANAL LEAGUE.

RESULTS OF GAMES, MARCH 12.

At Ancon—Ancon, 2; Atlantics, 6.

At Empire—Empire 0; Commissary-Subsistence, 4.

STANDING OF CLUBS.

	P.	W.	L.	P.C.		P.	W.	L.	P.C.
Com-Sub.	3	3	0	1.000	Ancon ...	3	1	2	.334
Empire ..	3	1	2	.334	Atlantics.	3	1	2	.334

SCHEDULE OF GAMES, MARCH 19.

At Colon—Atlantics vs. Ancon.

At Empire—Commissary-Subsistence vs. Empire (Benefit.)

SUMMARIES OF GAMES, MARCH 12.

C.-S.	AB.	H.	PO.	A.	E.
Bucha'n,cf.	5	1	1	0	0
Breivogle,lf	3	0	0	0	0
Curtis,2b..	3	3	0	4	0
Mosher,1b.	3	0	15	2	0
Rutherf'd,ss	4	2	1	2	0
Lacey,3b...	2	0	1	3	0
Meegan,c..	4	1	6	2	0
Guptil,rf...	3	2	1	0	0
Kellogg,p..	4	1	2	4	1
Totals...	31	10	27	17	1

Empire	AB.	H.	PO.	A.	E.
Bryan, 3b..	2	1	3	1	0
Moore, c...	3	0	7	1	0
Markley,2b.	3	0	2	4	0
Dixon,ss...	4	1	3	3	1
Barney,rf..	4	0	0	0	0
Bell,1b.....	2	0	10	4	0
Murphy,cf..	3	0	0	0	1
VanZandt,lf	2	1	2	0	0
Junger,p..	2	0	0	2	0
Dough'ty,2b	1	0	0	0	0
*Barnes....	1	0	0	0	0
Totals...	27	3	27	15	2

Com.-Subsistence...	1	0	0	2	0	0	0	1	0—4
Empire............	0	0	0	0	0	0	0	0	0—0

*Batted for Moore in 9th.

Runs—C.-S.: Buchanan, Curtis, Lacey, Meegan Runs earned—C.-S., 2. Two base hits—Curtis, Rutherford, Guptil. Sacrifice hits—Breivogle, Mosher, Lacey, Bryan. Stolen bases—Curtis, VanZandt. Bases on balls—Off Kellogg, 3; off Junger, 3. Struck out— By Kellogg, 7; by Junger, 5. Hit by pitcher—by Kellogg, 1 (VanZandt). Left on bases—C.-S., 6. Empire, 5. Double plays—Dixon to Markley, Dixon to Bell, Bryan unassisted, Kellogg to Mosher. Umpire—Irwin. Time of game—2.10 Scorer—Moeller.

Atlantics	AB.	H.	PO.	A.	E.
Emerson,lf.	4	1	3	0	0
Edwards,1b	5	1	9	0	0
TSulli'n,3b.	4	1	1	2	0
Clements,cf	4	0	4	0	0
WSulli'n,ss.	4	3	2	3	1
Yingling,c..	4	1	4	0	0
Reeves,2b..	3	1	3	3	0
Davis,rf...	4	0	1	0	0
Horrigan,p.	4	0	0	2	0
Totals...	36	8	27	10	1

Ancon	AB.	H.	PO.	A.	E.
RDren'n,cf.	4	4	2	0	0
LDren'n,rf.	3	1	0	0	0
Pearman,3b	5	0	3	1	2
Smith,rf,2b.	4	1	0	5	2
Nygren,1b..	3	1	9	1	0
Hunter,2b,ss	4	1	2	1	1
Caldwell,c..	4	1	11	0	1
Fechtig,lf.	4	1	0	1	1
Hull,p.....	4	0	0	3	0
Potter,ss...	0	0	0	0	0
Gamble,lf..	0	0	0	0	0
Totals...	35	10	27	12	7

Atlantics....	4	0	1	0	0	0	1	0	0—6
Ancon............	1	0	0	0	0	0	1	0	0—2

Runs—Atlantics: Emerson (2), Edwards, T. Sullivan W. Sullivan, Yingling; Ancon: R. Drennan (2). Runs earned—Atlantics, 2; Ancon, 1. Two base hits—Edwards, T. Sullivan, Smith, R. Drennan. Sacrifice hits—L. Drennan (2), Nygren. Stolen bases—Emerson, Davis (2), Edwards, R. Drennan, Pearman, Fechtig. Bases on balls—Off Horrigan, 1; off Hull, 2. Struck out—By Horrigan, 3; by Hull, 7. Hit by pitcher—by Horrigan, 1 (R. Drennan). Left on bases—Atlantics, 5; Ancon, 10. Double play—Smith to Nygren to Pearman. Umpire—Lawler. Time of game—2.00. Scorer—J. K. Monroe.

SUMMARIES OF GAMES, MARCH 5.

C. S.	AB.	H.	PO.	A.	E.
Buchan'n,cf.	4	0	2	1	0
Breivogle,lf	4	2	1	0	0
Curtis,2b..	4	1	1	2	2
Mosher,1b.	4	1	8	1	0
Rutherf'd,ss	4	2	3	2	1
Lacey,3b..	5	3	3	3	0
Meegan,c..	5	1	8	1	1
Guptil, rf..	5	1	0	0	0
Kellogg,p..	4	0	1	7	1
Totals...	39	11	27	17	5

Atlantics	AB.	H.	PO.	A.	E.
Hennessy,ss.	4	0	6	2	6
Edwards,1b.	3	2	10	0	0
Sullivan,cf..	5	1	1	1	0
Reeves,2b..	3	1	0	4	2
Herring,C.,c	1	0	2	1	0
Thompson,c.	2	1	4	2	2
Emerson,lf.	4	1	2	0	1
Her'g,G.,3b	0	0	0	1	0
Davis,3b...	4	0	1	2	0
Osborne,rf..	4	1	0	0	0
Horrigan,p.	4	0	1	3	1
Totals...	34	7	27	16	12

Com.-Subsistence...	0	5	1	0	0	1	0	0	1—8
Atlantics..........	0	2	3	0	0	0	1	0	0—6

Runs—C.-S.: Mosher (2), Rutherford, Lacey (2), Meegan, Guptil, Kellogg; Atlantics: Hennessy, Edwards (2), Sullivan, Reeves, Emerson. Runs earned—Atlantics, 4; C.-S., 3. Two base hits—Buchanan, Mosher, Edwards, Osborne. Stolen bases—Davis (2.) First base on errors—Atlantics, 6; C.-S. 2. Bases on balls—Off Kellogg, 4; off Horrigan, 4. Struck out—By Kellogg, 6; by Horrigan, 7. Hit by pitcher, 1 (Reeves) Wild pitches—Horrigan, 3; Kellogg, 1. Passed balls, Thompson (2). Left on bases—C.-S., 4; Atlantics, 6. Double plays—Sullivan to Hennessy; Kellogg to Lacey. Umpire—Freel. Time of game—2.15. Rain delayed game 15 minutes. Scorer—J. P. Mead.

Davis ran for Reeves in second inning; Davis and Sullivan ran for Reeves in seventh inning.

G. Herring and C. Herring were put out of game in the second half of the second inning for disputing the umpire's decision. Thompson took C. Herring's place, and Davis took G. Herring's place.

Empire	AB.	H.	PO.	A.	E.
Bryan,3b..	4	1	0	4	1
Moore,c...	3	1	3	0	0
Dixon,ss ..	3	0	3	3	2
Barney,rf...	4	2	0	0	0
Wright,2b..	4	0	0	2	1
Bell, 1b....	3	0	13	0	0
VanZandt,lf.	4	1	0	0	0
Murphy, cf.	3	1	4	0	0
Junger,p...	2	0	1	2	1
Daugherty,.‡	1	0	0	0	0
Totals...	31	6	24	11	5

Ancon.	AB.	H.	PO.	A.	E.
RDren'n,cf.	5	5	0	0	0
LDren'n,rf.	4	1	0	0	0
Potter,ss...	3	1	3	3	0
Smith, 2b..	4	1	1	5	0
Tinsley, lf.	3	1	0	0	0
Pearman,3b	3	0	0	2	0
Nygren,1b.	4	0	15	0	1
Caldwell, c	4	0	8	1	2
Hull, p. ...	4	1	0	3	1
Totals..	34	10	27	14	4

Empire..........	0	0	0	1	1	3	0	0	0—5
Ancon...........	3	2	0	0	0	1	0	0	0—6

‡Batted for Junger in 9th inning.

Runs—Empire: Barney (2) Bell, Van Zandt, Murphy; Ancon: R. Drennan (3), L. Drennan, Potter, Smith. Runs earned—Empire, 3. Ancon 2. Two base hits—Moore, Barney, Van Zandt. Home Runs—Barney. Sarifice hits—Moore, Junger, L. Drennan, Smith. Stolen bases—R. Drennan (2). Bases on balls—off Junger, 2. off Hull, 4. Struck out—by Junger, 2; by Hull 5; hit by pitcher,—by Junger (Tinsley). Left on bases—Empire, 5; Ancon, 10. Double plays—Caldwell unassisted; Dixon to Bell. Umpire—Irwin. Time of game—55. Scorer— J. K. Monroe.

The league baseball game between the Empire and Commissary-Subsistence teams, to be played at Empire park on Sunday, March 19, 1911, will be played for the benefit of Conductor C. C. Fitzpatrick. There will be music by the Marine Band.

The Atlantic second team defeated a team representing Gorgona shops by a score of 14 to 6 in a game played on the Lincoln House grounds in Colon on March 5.

The Corozal baseball team defeated the "Commissary Outlaws" at Colon on March 12, by a score of 7 to 0.

Married.

FLEISCHMAN-HENDERSON—At Cristobal, C. Z., on January 22, at 3. 30 p. m., Mabel C. Henderson of Pittsburg, Pa., to I. H. Fleischman of Atlanta, Ga., the Rev. H. A. Brown officiating. Canal Zone residence, Culebra.

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal and Colon during the week ending March 11, 1911:

Prinz Joachim, March 6, from New York, with five cases copper wire, 3 barrels valves for stock.

Allianca, March 7, from New York, with 28 crates wheels on axles for Atlantic Division; six pieces cable chain for Pacific Division; eight reels wire rope for Mechanical Division; 72 pieces drill bits, 52 cases machinery for Panama railroad; 10 bundles shovels, 24 cases incandescent lamps, 12 cases dish pans, 12 cases air brake material, 12 packages school desks, 11 cases steel bars, 18 pieces steel plate, 22 pieces railroad frogs, 150 cases common soap, 17 cases babbitt metal for stock; and a miscellaneous cargo, the whole consisting of 516 packages weigning 128 tons.

Barrister, March 7, from Liverpool, with 13 dredge buckets for Pacific Division.

Conway, March 7, from New York, with 12,360 barrels cement, 66,760 bags cement for Atlantic Division; 2,035 pieces steel rail for stock.

Border Knight, March 7, from Baltimore, with 993 tons structural material for Atlantic Division; 1,085 tons steel rods for Pacific Division; 1,500 car wheels for Mechanical Division; 4,934 pieces steel rail, 84 bags cork, 17,000 cases dynamite, 249 pieces galvanized pipe, 15 cases henzine for stock.

Abangarez, March 9, from New Orleans, with six cases castings for Atlantic Division; 24 pieces castings for Central Division; 15,451 feet B. M. yellow pine lumber for Mechanical Division; 200 pieces switch stands, 1,148 bales prairie hay for stock.

Zocopo, March 9, from New York, with 50 casks copper ingots for Mechanical Division; 875 bales prairie, 59 drums lubricating oil for stock.

Family Quarters.

Applications for married quarters were on file March 1, as follows:

PLACE.	No. 1 List.*	No. 2 List.
Ancon........................	4	34 (1)
Ancon Hospital................	1	3
Balboa........................	1	38 (8)†
Corozal.......................	....	36 (6)
Cristobal.....................	2	136 (3)
Culebra.......................	7 (2)†	25
Empire........................	3	54 (19)
Gatun.........................	....	156 (60)
Gorgona.......................	19 (2)	139 (31)
Las Cascadas-Bas Obispo........	3	24 (9)
Miraflores....................	....	1
Pedro Miguel-Paraiso...........	....	55 (17)
Porto Bello...................	1	18 (2)
Tabernilla....................	....	....
Toro Point....................	1	7
Total........................	42 (4)	726 (156)

*Persons employed prior to January 1, 1908, are on the No. 1, or preferred list.

†The figures in parentheses show the number of applicants already occupying regular or nonhousekeeping family quarters at stations, other than those at which applications are filed.

Lidgerwood Unloading.

A statement of Lidgerwood cars unloaded in the Central Division during the month of February, follows:

LOCATION.	No. of unloaders.	No. of trains.	No. of cars.
Balboa..............	3	924	18,480
Miraflores...........	3	725	14,500
Gamboa.............	4	1,047	21,390
Total...............	10	2,696	54,370

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Gorgona, C. Z., on Sunday, March 19, 1911, at 6 p. m. The program follows:

1 March—*Kiss Me, Honey, Kiss Me*.......Snyder
2 Selection—*The Dollar Princess*..............Fall
3 Characteristique Morceau—*Trombone Mix-up*..........................Dorsey
4 Overture—*Semiromide*.......................Rossini
5 (*a*) Song—*The Rosary*.......................Nevin
(*b*) Caprice—*The Whistler and His Dog*....Pryor
6 March—*Tannhauser*........................Wagner
7 Descriptive—*Hunting Scene*............Bucalossi
8 *Maple Leaf Rag*...........................Joplin
9 Excerpts form *Carmen*......................Bizet
10 March—*Midshipman*...............Laurendeau

CHAS. E. JENNINGS, *Musical Director*.

The next concert will be given at Empire on Sunday, March 26, at 6. p.m.

NOTICE.

Estate of Gregorio Perez.

Creditors of the above estate are hereby notified to file their claims with the Circuit Court Clerk, Ancon, or the same will be barred at the expiration of the minimum term fixed by the Code.

LOST— At Empire baseball park on Sunday, March 12, one ladies' white crocheted handbag. Finder kindly return to H. S. Farish, Culebra, C. Z., and receive reward.

The following vessels arrived at or departed from the port of Balboa during the week ending March 4 1911:

Arrivals—February 26, *Pleiades*, from San Francisco; February 27, *Ruponco*, from Buenaventura; March 1, *Manavi*, from Guayquil; *Pennsylvania*, from San Francisco; March 2, *Polena*, from Valparalso.

Departures—February 27, *Mexico* to Valparaiso; March 1, *Mackinaw*, to San Francisco. March 2, *Arica*, to Guayaquil; *Peru*, to San Francisco. March 3, *Olson and Mahoney*, to San Francisco.

CLASSIFIED EXPENDITURES.

A statement of classified expenditures under the Isthmian Canal Commission to January 31, 1911, follows:

PERIOD.	Department of Civil Administration.	Department of Sanitation.	Department of Construction and Engineering.	General Items.	Total.
Total to June 30, 1909..	$3,427,090.29	$9,673,539.28	$69,622,561.42	$78,022,606.10	$160,745,797.09
Total, fiscal year 1910..	709,351.37	1,803,040.95	26,300,167.05	2,863,088.83	31,675,648.20
July, 1910..............	58,474.88	156,006.64	2,216,849.78	280,015.85	2,711,347.15
August, 1910...........	63,887.05	164,220.65	2,348,777.07	336,961.35	2,913,846.12
September, 1910........	60,586.46	153,433.27	2,516,814.41	236,170.76	2,967,004.90
October, 1910..........	37,250.26	146,587.47	2,565,042.28	295,537.33	3,044,417.34
November, 1910	71,981.80	137,912.89	2,356,292.01	233,587.25	2,799,773.95
December, 1910.........	69,424.73	144,754.71	2,480,221.44	179,047.95	2,873,448.83
January, 1911	71,426 87	137,665.14	2,202,370.20	235,678.30	2,647,140.51
Total................	$4,569,473.71	$12,517,161.00	$112,609,095.66	$82,682,693.72	$212,378,424.09

OFFICIAL CIRCULARS.

Acting Examiner of Accounts.

CULEBRA, C. Z., March 13, 1911.

CIRCULAR No. 374:

Effective March 13, 1911, Mr. T. L. Clear will act as Examiner of Accounts during the absence of Mr. W. W. Warwick.

GEO. W. GOETHALS, *Chairman.*

Price of Sand and Stone.

CULEBRA, C. Z., March 10, 1911.

CIRCULAR No. 169-F:

The provisions of Circular No. 169-E relative to the price at which sand and stone sold to outside parties shall be billed are hereby cancelled. Effective March 1, 1911, the following prices will govern:

WHEN FURNISHED BY PACIFIC DIVISION.

	Per Cubic Yard.
Crushed stone	$1.50
Screenings	.50
Sand	1.25

WHEN FURNISHED BY ATLANTIC DIVISION.

	Per Cubic Yard.
Crushed stone	$2.50
Screenings	1.00
Sand	2.25

The prices given above are net f. o. b. at point of delivery to the Panama railroad.

The following rates, covering fuel, supplies and repairs, will apply for use of undermentioned equipment between departments and divisions of the Commission and the Panama railroad:

	Per Hour.
Pile drivers	$0.50
Locomotive cranes	.50
Floating pile drivers	.50

A charge will also be made for the actual time of the crew and auiliary gangs, plus 10 per cent, as provided in Circular No. 169-E.

	Per Hour.
For use of tug without crew	$5.00

The following rates, covering the use of the undermentioned equipment, including crew, will apply between departments and divisions of the Commission and the Panama railroad:

	Per Hour.
Wrecking cranes	$7.00
Tugs	10.00
American locomotives	8.00
French locomotives	6.00
Crane barges	10.00

The minimum charge shall be for one hour.

For individuals and companies:

	Per Hour.
Pile drivers	$0.75
Locomotive cranes	.75
Floating pile drivers	.75

A charge will also be made for the actual time of crew and auxiliary gangs, plus 20 per cent, as provided in Circular No. 169-E.

Wrecking cranes with crew	$10.50
Tugs with crew	15.00
Locomotives with crew	12.00
Crane barges with crew	15.00

The minimum charge shall be for one hour.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Designation of Employes.

CULEBRA, C. Z., March 13, 1911.

CIRCULAR No. 375:

As prescribed in circular letter from this office, dated November 22, 1907, each employe will be given in time books, on pay rolls, and in other official records, that designation adopted in Circulars Nos. 229 and 299 which correctly describes his trade or the class of work performed by him.

All employes incorrectly designated will be redesignated immediately, and should designations other than those prescribed in Circulars Nos. 229 and 299 be necessary, recommendation in regard thereto should be submitted to this office.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Transportation on Official Business.

CULEBRA, C. Z., March 10, 1911.

TO ALL CONCERNED:

The 120-trip tickets issued by the Isthmian Canal Commission will not in future be accepted for transportation on Sundays and holidays, except from members of the I. C. C. Band. Employes whose duties require them to travel on the Panama railroad on Sundays and holidays will obtain official business trip passes for the purpose.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Decauville Material as Scrap.

CULEBRA, C. Z., March 4, 1911.

ALL ACCOUNTABLE OFFICIALS:

No Decauville material of any class will be shipped as scrap until it has been surveyed.

By direction of the Chairman.

Respectfully,
C. A. DEVOL, *Chief Quartermaster.*

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, March 11, 1911. All heights are in feet above mean sea level.

DATE AND DATE	STATION.				
	Vigia.	Alhajuala	Gamboa.	Bohio.	Gatun Lake.
Sun. March 5	126.0	92.6	45.1	13.1	13.1
Mon. March 6	126.0	92.5	45.1	13.0	13.0
Tues. March 7	125.9	92.5	45.1	13.0	13.0
Wed. March 8	125.9	92.4	45.1	12.9	12.9
Thurs. March 9	125.9	92.4	45.0	12.9	12.9
Fri. March 10	125.8	92.3	45.0	12.8	12.8
Sat. March 11.	125.8	92.3	44.9	12.8	12.8
Height of low water	125.0	92.0	45.0		

Rainfall from March 1 to 11, Inclusive.

STATIONS.	Maximum in one day*	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	†	3	†
Balboa	0	...	0
*Miraflores	0	....	0
Pedro Miguel	0	....	0
Rio Grande	0	....	0
Central Section—			
Culebra	0	....	0
*Camacho	.02	2	.02
Empire	0	....	0
Gamboa	.18	2	.18
*Juan Mina	0	....	0
Alhajuela	.01	1	.01
*El Vigia	0	....	0
*Gorgona	0	....	0
San Pablo	0	....	0
Tabernilla	.02	5	.03
Bohio	.29	2	.34
Monte Lirio	.20	6	.61
Atlantic Section—			
Gatun	.61	2	.99
*Brazos Brook	.24	6	.50
Cristobal	.16	2	.30
Porto Bello	.39	2	‡1.26
*Nombre de Dios	.15	3	.49

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

†Trace.

‡To 5 p. m., March 10.

WEATHER CONDITIONS, CANAL ZONE, FEBRUARY, 1911.

STATIONS.	Press're (reduc'd to mean of 24 hours.)	Temperature.					Mean relative humidity.	Precipitation.			Wind.				
		Mean.	Maximum.	Date.	Minimum.	Date.		Total inches.	Station average.	Number of rainy days.	Total movement (in miles.)	Prevailing direction.	Max. velocity (in miles.)	Direction.	Date.
Cristobal	29.876	77.9	82	16	71	24	82	1.81	1.46	18	10,480	N.E.	30	N.	23
Culebrs	29.861	78.0	88	11	66	3	85	.74	.57	7	6,836	N.W.	33	N.	27
Ancon	29.850	79.8	91	1	68	2	83	2.75	0.91	9	5,915	N.W.	26	N.	22

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

COROZAL.

Men interested in indoor baseball should be present on Monday and Wednesdays to practice for the league.

CULEBRA.

The 200, or over, bowling scores for the week ending March 11 are, as follows: Duckpins—Hill, 103, 102, 101; bigpins—Huttlemeier, 220; Baumer, 206.

The duckpin bowling team from Cristobal played a match game with the local team on Saturday night, winning two games and losing one. Scores, as follows: Cristobal, 447, 475, 437; Culebra, 438, 449, 463.

The Empire indoor baseball team played the Culebra team on Saturday evening. Score: Culebra, 21; Empire, 14.

"Sex and life, manhood" will be discussed by the "Topic" club on Monday evening, March 20, under the leadership of H. N. Sollenberger.

EMPIRE.

The boy scouts will take an outing on Saturday, March 18.

Moving pictures will be exhibited on Saturday evening, March 18.

The following high scores were bowled during the past week: McLeod, 111; Scull, 125, 103; Danielson, 236; Goolsby, 222, 202; Pinney, 205.

The topic for the discussion club under the auspices of the literary society on March 17 will be "City and country life." The leader will be Mr. Christopherson.

There will be a free special train to the Gatun Carnival on Friday evening, March 17, leaving Empire about 7 o'clock. The glee club will attend in a body.

GORGONA.

The bowling alleys are being fully overhauled and planed, and will probably be open to the public on March 25. The February duckpin scores over 100 were, as follows: Otis, 114, 102, 106, 108; Montgomery, 107, 107, 101; Gailliott, 111; Davis, 102; Kaufman, 101, 104; Stoehr, 107; Edwall, 101; McWilliams, 104, 101, 101, 114; Wright, 106; Ellsworth, 115; Willison, 103; Dunlop, 102; Gaedke, 104.

The 200, or over, scores in bigpins were, as follows: Sammetinger, 205; McConaughey, 214, 221, 202, 206, 219; Bordt, 205, 214, 200; Varenkamp, 223, 214; Gaedke, 218, 202; Stoehr, 207, 204, 202, 207; Halderman, 202, 200, 202, 216; Gailliott, 207; Stewart, 200, 244, 212, 204, 206; Miller, 200; Canfield, 227; Tretter, 224; Haggerty, 205; Mrs. Cocoran, 235, 201.

The Caveny Company will give a return engagement on March 28.

The Cristobal vaudeville company will give an entertainment on March 21.

The Cristobal indoor baseball team was defeated by the local team on Saturday, March 11, by the score of 24 to 14. The Gorgona team will play at Empire on March 18.

The night men will hold a "St. Patrick's Day smoker" on Friday afternoon, March 17.

GATUN.

Motion pictures will be shown on March 18.

The glee club rehearsal will be omitted on March 16, and the physical culture class on March 17.

The Caveny entertainment wil return to Gatun on March 27.

On March 19, Mr. Barte will give a 10-minute talk on the "City," and Mr. Chenneville will lead the discussion on "Questionable amusements."

The literary and debating club will hold no meeting this week, but will meet on Wednesday night, March 22. Several musical numbers will be added to the program.

CRISTOBAL.

The duckpin match on Saturday night between Empire and Cristobal on the local alleys resulted, as follows:

Empire.				Cristobal.			
Gustavson	84	101	89	Barrett	88	83	84
Parkis	96	.	79	Claherty	109	98	95
Goolsby	....	80	90	Burns, T.	81	81	80
Lippert	85	108	99	Gibson	93	86	109
Gorham	80	91	110	Smith			78
Scull	86	85	....	Rosteck	90	75	....
Total	431	465	467	Total	461	423	446

The sale of tickets for the Caveny entertainment to be given on Friday night, March 17, will be, as follows: Members can secure tickets for themselves and friends up to Thursday, and on Thursday and Friday, tickets will be on sale to nonmembers.

LOST—On March 6, between Ancon Hospital and Paraiso, a gold hunting case watch, with the initials "G. L." engraved on the outside, and "Edward to Georgina" on the inside of the case. A suitable reward is offered for its return to Mrs. F. LaFountain, Paraiso, C. Z.

COMMISSARY DEPARTMENT.

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m. 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning March 11.

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	6
Shoulder, neck trimmed off, (4 pounds and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg, (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing, per pound	10
Shoulder, for roasting (not under 4 pounds), per pound	12½
Chops—Shoulder, per pound	16
Chops, per pound	24
Loin for roasting, per pound	24
Cutlets, per pound	28
Pork, loin chops or roast, per pound	14
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	8
Corned, per pound	12, 14, 16
Chuck roast (3 pounds and over), per pound	12
Pot roast, per pound	12½
Rib roast, second cut (not under 3½ pounds), per pound	16
Rib roast, first cut (not under 3 pounds), per pound	18
Sirloin roast, per pound	19
Rump roast, per pound	19
Porterhouse roast, per pound	20
Steak, chuck, per pound	12½
Round, per pound	13
Rib, per pound	18
Sirloin, per pound	19
Rump, per pound	19
Porterhouse (not less than 1½ pounds), per pound	20
Tenderloin (Western) per pound	24
Tenderloin (Native), per pound	30

MISCELLANEOUS.

Caviare, Russian in ¼-lb. jars, per jar	85
Livers—Beef, per pound	7
Calf, each	60
Half, each	30
Sausage—Pork, per pound	15
Bologna, per pound	10
Frankfurter, per pound	12
Lieberwurst, per pound	10
Sweet bread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	*23
½-dozen, only	*12
Bluefish, fresh, per pound	16
Cod, fresh, per pound	10
Halibut, fresh, per pound	15
Oysters, in 1-quart kegs, keg	50
Oysters in ½-gallon kegs, keg	1.00

POULTRY AND GAME.

Chickens—Fancy roasting, milk fed, large, each	1.25
Fancy roasting, milk fed, med., each	1.00
Fancy roasting, corn fed, large, each	1.10
Fancy roasting, corn fed, med., each	90
Fowls, each	60, 70, 80, 90, 1.00
Ducks, large, each	1.30
medium, each	1.10
Broilers, milk fed, each	60
corn fed, each	55
Turkeys, per pound	28
Squabs, each	35
Capons	2.10
Rabbits, dressed, each	40
Pheasants, each	*50
Partridges, each	50
Grouse, each	*50

CURED AND PICKLED MEATS.

Ham—German, Westphalia, per pound	36
Sugar cured, per pound	18
Sliced, per pound	20
Half, for boiling, per pound	19
Boiled, per pound	25
Hocks, per pound	18
Picnic, Winchester, per pound	15
Bacon—Breakfast, whole piece, per pound	23
Breakfast, sliced, per pound	24
Beef, salt, family, per pound	9½
Pork, salt family, per pound	14
Ox Tongues each	75
Pigs' feet, per pound	9
Tongues, per pound	14
Sliced bacon in 1-pound tins, per tin	30
In 1-pound jars, per jar	30

DAIRY PRODUCTS

	Price.
Butter—Creamery special, per pound	32
Cheese—Roquefort, per pound	38
Cheese—Philadelphia cream, cake	10
Young America, per pound	20
Swiss, per pound	26
Edam, each	1.00
Camembert, in large tins, tin	38
Camembert, in small tins tin	14
Neufchatel, cake	6
Gouda, per pound	34
Port de Salut, per pound	1.20
Milk (Inspected or certified), per bottle	**25
(Pasteurized), bottle	**18
Buttermilk, bottle	**15
Ice cream, quart	‡25
½-gallon	‡50

VEGETABLES AND FRUITS.

Beets, per pound	3
Celery, per head	6
Carrots, per pound	3
Cabbage, per pound	3
Cucumbers, per pound	10
Kale, per pound	6
Lettuce, per pound	*10
Onions, per pound	3½
Potatoes, white, per pound	2½
sweet, per pound	2
Parsnips per pound	3
Romaine per pound	*10
Squash per pound	4
Spinach per pound	10
Turnips, per pound	3
Yams, per pound	3
Apples, per pound	6
Grapefruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12
Tangerines, each	2

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*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Misdirected Letters.

Ancon, C. Z., March 8, 1910

The following insufficiently addressed letters, originating in the United States and its possessions, have been received in the office of the Director of Posts and may be secured upon request of the addressee:

LETTERS UNCALLED FOR MARCH 8, 1911.

Beyers, Walter F.
Brown, H. M.
Campbell, O. F.
Cowes, G. A.
Christopherson, Edmund D. (pkg.)
Dorsey, W. B.
Evans, Joseph Ashby
Fairbanks, C. M.
Goree, F. E.
Hortenstein, J. W.
Jackson, Sam
Keys, J. C.
LaFountain, Frank
Marx, Joe
McIntire, Willie
Mestrezat, C. A.
Miller, Wm.
Morris, Benjamin
Page, Arthur Stuart
Pearce, Harry Ash
Pearson, Mrs. Annie
Percie, George
Pfisterer, Miss Eleanor
Russell, John D.
Shaffer, Leo A.
Snell, L. O.
Steele, Virgil
Thorpe, L. Dean
Udry, Mrs. Mattie
Ventural, L.
Wallace, Frederick, J.
Ward, Miss Alice
Weston, All
Wilder, Gerrit P.

LETTERS UNCALLED FOR MARCH 15, 1911.

Adams, Crawford
Barnes, J. D., M.D.
Barnett, J. C.
Bartholl, Charles
Bean, Mrs. Margaret J.
Beck, John
Blankley, J. H.
Bowles, James T.
Byrne, Joseph
Clause, Roy
Croft, Mrs. Florence
Diehl, Harvey E.
Emlaw, William
Fahlsing, F. H.
Fisher, E. B.
Fortune, John T.
Fowler, F. W.
Gates, Charles
Geiger, J. F.
Gordon, Fitz
Gray, Albert
Hilldor, Capt. William F.
Hobbs, J. W.
Howard, Earle L.
Hurley, Walter
Jelineck, L. W.
Jolly, James
Keene, H. G.
Kehoe, W.
Kennedy, H.
Klunk, Chas.
Klunk, Chas.
Knapp, Guthrie
Kneeland, Mrs. J.
Lawrence, Thomas
Luthell, Joseph T.
Masan, Mrs. Myrtel
McGlenn, M. J.
Mixner, Fredric
Norton, Mrs. Fobias
Nouland, Capt. C. P.
Rieg, Julia
Rudd, Mrs. Richard G.
Skene, Mrs. F. H.
Sterritt, C.
Turner, Bert D.
Watson, G. W.
Whaler, John W.
Whitehead, Geo.
Wilder, Gerrit P.
Wilson, Ben.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending March 22, 1911, (75th meridian time):

Date.	Low.	High.	Low.	High.	Low.
	A. M.	A. M.	A. M.	P. M.	P. M.
March 16	......	4.45	11.00	5.05	11.20
March 17	......	5.25	11.35	5.40	11.55
			P. M.		
March 18	......	6.00	12.15	6.15	......
March 19	12.35	6.35	12.50	6.50	......
March 20	1.10	7.10	1.27	7.20	......
March 21	1.50	7.45	2.05	7.55	......
March 22	2.30	8.25	2.48	8.35	......

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Advance	P. R. R.	Monday	Mar. 13
Panama	P. R. R.	Saturday	Mar. 18
Allianca	P. R. R.	Friday	Mar. 24
Colon	P. R. R.	Friday	Mar. 31
Advance	P. R. R.	Thursday	April 6
Panama	P. R. R.	Wednesday	April 12
Allianca	P. R. R.	Tuesday	April 18
Colon	P. R. R.	Monday	April 24
Advance	P. R R.	Saturday	April 29

CRISTOBAL TO NEW YORK.

Colon	P. R. R.	Sunday	Mar. 19
Advance	P. R. R.	Saturday	Mar. 25
Panama	P. R. R.	Friday	Mar. 31
Allianca	P. R. R.	Thursday	April 6
Colon	P. R. R.	Wednesday	April 12
Advance	P. R. R.	Tuesday	April 18
Panama	P. R. R.	Tuesday	April 25
Allianca	P. R. R.	Monday	May 1
Colon	P. R. R.	Saturday	May 6
Advance	P. R. R.	Friday	May 12

A fortnightly service of the *Cristobal* and *Ancon* will be maintained as nearly as possible. Due notice of the sailings of these ships from the Isthmus will be given. On the outward voyage these ships sail from the pier at the foot of 12th street, Hoboken, N. J.

NEW YORK TO COLON.

Almirante	U. F. C.	Thursday	Mar. 9
Prinz Aug. Wilhelm	H.-A.	Saturday	Mar. 11
Santa Marta	U. F. C.	Thursday	Mar. 16
Trent	R. M.	Saturday	Mar. 18
Metapan	U. F. C.	Thursday	Mar. 23
Prinz Joachim	H.-A.	Saturday	Mar. 25
Oruba	R. M.	Saturday	April 1
Magdalena	R. M.	Saturday	April 15

COLON TO NEW YORK.

Zacapa	U. F. C.	Thursday	Mar. 16
Oruba	R. M.	Tuesday	Mar. 21
Almirante	U. F. C.	Thursday	Mar. 23
Prinz Aug. Wilhelm	H.-A.	Tuesday	Mar. 28
Santa Marta	U. F. C.	Thursday	Mar. 30
Magdalena	R. M.	Tuesday	April 4

NEW ORLEANS TO COLON.

Heredia	U. F. C.	Wednesday	Mar. 8
Atenas	U. F. C.	Saturday	Mar. 11
Cartago	U. F. C.	Wednesday	Mar. 15
Turrialha	U. F. C.	Saturday	Mar. 18
Parismina	U. F. C.	Wednesday	Mar. 22
Abangarez	U. F. C.	Saturday	Mar. 25

COLON TO NEW ORLEANS.

Abangarez	U. F. C.	Thursday	Mar. 16
Heredia	U. F. C.	Thursday	Mar. 16
Atenas	U. F. C.	Thursday	Mar. 23
Cartago	U. F. C.	Thursday	Mar. 23
Turrialba	U. F. C.	Thursday	Mar. 30
Parismina	U. F. C.	Thursday	Mar. 30

COLON TO BARBADOS, CALLING AT TRINIDAD.

Trent	R. M.	Tuesday	Mar. 28
Oruba	R. M.	Tuesday	April 11
Magdalena	R. M.	Tuesday	April 25

The next sailing of the Leyland Line will be as follows: *Colonian* on or about March 19, for New Orleans, via Kingston, Ja.

Hamburg-American steamers leave for New York every Tuesday at 10 a. m.; for Jamaica every fortnight, connecting there with steamers for all points in Cuba; for Port Limon every Tuesday, direct, or by way of Bocas del Toro.

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursday at 3 p. m.; for New Orleans via Port Limon and Puerto Barrios on Thursday at 4 p. m., and for New York on Thursday at 11 a. m.

Sailings of the French line (Ciè Gènèrale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3d and 20th of each month.

The following vessels arrived at, or departed from, Balboa during the week ending March 11:

Arrived—March 5, *San José*, from San Francisco; *Barracouta*, from Central America. March 6, *Fenwick*, from San Francisco; U S S *Princeton*, from Corinto; *Peru*, from Valparaiso. March 10, *Ecuador*, from Guayaquil.

Departed—March 6, *Rupanco*, to Buenaventura. March 7, *Manavi*, to immediate ports; *Palena*, to Valparaiso. March 10, *San José*, to San Francisco.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, MARCH 22, 1911. No. 30.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Chairman's Report.

The report of the Chairman of the Isthmian Canal Commission for the month of February is published in full in other columns of this issue of THE CANAL RECORD. It gives a detailed account of the progress of Canal work in all departments and divisions.

Effect of Blasting on Slides.

In the investigation which is being conducted by the Third Division of the Chief Engineer's office, to determine the effect of blasting on slides in Culebra Cut, the experiments indicate that the "dobeying" or surface blasting has little effect on the slides. The investigation is being continued to determine the effect which varying charges of dynamite at varying depths have on the banks of the Cut. The progress report says:

"The 'dobey' shots seem to produce much greater concussion of the air than the deep blasts. The deep blasts seem to produce earth vibrations that extend well back from the banks of the Canal, varying in intensity with the character of the material, amount of explosive used, etc.

"From the indications and observations made on the banks during the several kinds of blasting, it seems to be probable that the 'dobey' blasts have little effect on the banks, beyond the possibility of displacing small amounts of exposed material previously loosened. It is thought, however, that the concussion of the air produced by the 'dobey' blasting is mainly responsible for the shaking of houses and the damage resulting.

"The effect of this air concussion is plainly shown by placing two barographs side by side, one being fully exposed to the air and the the other carefully protected, both, however, being in similar positions regarding the ground. It has been found that the first instrument will show a distinct record, while a very slight record, if any, will be shown on the other, indicating that 'dobey' shooting does not appreciably affect firm banks, and is, therefore, not initially responsible for sliding of material.

"Particular attention is now being given to the blasting south of the Empire bridge and near the slide at old Culebra. Here it is expected to get information regarding the effect of blasting with different depths of holes and amounts of explosives."

Atlantic Entrance Dredges.

After an experiment which continued about a year it has been decided to equip all ladder dredges at work in the Atlantic entrance with five-sided top tumblers, to replace the four-sided tumblers with which the dredges have been equipped. It has been believed heretofore that a tumbler with more than four sides could not be used effectively, but experience with the five-sided tumblers in dredging done by the Japanese Government led to the adoption of the new style. A cast iron tumbler was made at Gorgona shops and it gave 160 days' service as compared with 70 days' service for the four sided tumblers. On the basis of this experience, three of the new style tumblers made of manganese steel were ordered, and one of them has been installed on dredge *No. 6*. The other dredges will be equipped with the new tumblers as soon as those now in service wear out.

The seagoing suction dredge *Caribbean* has returned to service maintaining the channel in the Atlantic entrance, after three weeks in dry dock during which it was given a general overhauling.

Work has been begun on a derrick barge which will be capable of handling 15-ton rock for the Colon breakwater. It will be used in placing the hard rock surface on the face of the breakwater. The barge will be 90 feet long and 42 feet wide, and will be constructed of creosoted wood.

Excavating and Dumping.

On Saturday, March 11th, 51 shovels working in the Central Division excavated 78,293 cubic yards of material, or an average of 1,535 cubic yards per shovel for the 8-hour working day. This is the highest average output per shovel ever made in the Central Division for one day. On the same day, 49 Lidgerwood trains and five small Western dump trains, or a total of 54 trains, were unloaded on the Balboa dumps, which is the greatest number of trains unloaded at this place since the commencement of work, the next highest record being on September 14, 1910, when 47 Lidgerwood trains and three Western dump trains were unloaded.

Gatun Locks.

False work for the erection of the lock gates is being placed, and the construction of the bridges over the locks for handling the gate material is completed. Advices from the States are to the effect that the first shipment of gate material will be made about the middle of April, and the construction plant at Gatun will be ready to begin the placing of it as soon as it arrives.

A slide of about 2,000 cubic yards of soft material from the east bank moved into the site of the lower locks last week. The movement was so rapid that the steam shovel working at the toe of the bank was caught and slightly damaged.

Repairs to Panama Railroad Ships.

The ships in the Panama railroad service between New York and Cristobal will go into dry dock for repairs, beginning March 31 and continuing until about May 23. In order that the repairs may be made without affecting the regularity of the service the cement carrying ships *Ancon* and *Cristobal* will be put in the regular service, and the cement service will be maintained by ships under the present charter agreement. The *Cristobal* will be in dry dock from March 31 to April 12, the *Allianca* from April 14 to April 26, the *Colon* from April 20 to May 2, the *Panama* from May 3 to May 15, the *Advance* from April 27 to May 5, the *Ancon* from May 18 to May 23. The published schedule of sailings will be changed from April 18 on ships leaving New York, and from May 2 on ships leaving Cristobal. The changes are noted in the regular list of sailings published elsewhere in this issue.

Panama Water Supply.

A 12-inch suction pump will be installed near the south end of the west toe of the dam at Miraflores, with its intake located in the old bed of the Cocoli River, for the purpose of ridding the reservoir of the greater part of its salt-impregnated contents. It has been found that the water covering the river bed, which constitutes the deepest part of the reservoir, was charged most heavily, and if the supply pumps had been situated near this spot, instead of at a considerable distance from it, the water could not have been used at all. Most of the leakage has been stopped by "shooting" the soft material in the core of the dam, thereby filling the crevices in the toe, as it fell back into place again. Only sufficient water to keep the pressure up is now pumped into the 16-inch Panama main.

The water level in the Rio Grande reservoir on March 15 was at about the same height as on the corresponding date a year ago. This is to a large extent due, however, to the auxiliary water supplies, viz., the Cocoli reservoir, the Pedro Miguel River, and more recently, since the use of the Cocoli Lake water has been curtailed, the Caimitillo River. On January 1, 1911, the water in the reservoir was at about 238 feet above sea level, while on March 15 it was at about 230, showing a fall of eight feet. The lowest stage recorded in the Rio Grande reservoir was during the dry season of

NOTES OF PROGRESS.

(Continued.)

1907-08, when it was 214, or 16 feet below the reading of March 15.

The 12-inch pump situated on the bank of the Pedro Miguel River is now supplying approximately 900,000 gallons of water each working day to the locomotive tank there, and many engines that formerly watered at Balboa take water at present at Pedro Miguel, thereby further conserving the Rio Grande storage. The Caimitillo River supply has diminished considerably since the installation of the pumping plant on its bank, at which time the estimated flow was 3,000,000 gallons in 24 hours. The absence of rainfall has dried up the parent stream, and the present supply, amounting to about 300,000 gallons a day, comes from its principal tributary, the Camaron River, and more particularly, from a branch emptying into it in which there is said to be a perennial flow.

Gatun Dam Spillway.

Two years ago, on March 17, the first concrete was laid in the spillway of Gatun Dam, and this was the first permanent concrete work to be done on the Canal. There have been placed to date 126,278 cubic yards out of a total of 250,000 cubic yards. Work is advancing behind the coffer dams on either side of the site of the spillway dam, and the concrete has reached a height which places this part of the work beyond danger from flood during the rainy season. A statement of the concrete work done during the week ending March 18, follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
	Cu. Yds.		
March 13	284	17:00	2
March 14	326	16:00	2
March 15	312	17:00	2
March 16	264	19:00	2
March 17	364	17:00	2
March 18	342	17:00	2
Total	1,892	103:00	
Previously reported	124,386		
Grand total	126,278		

Ancon Rock Crusher.

DATE.	Hours worked.	Cubic Yards.
March 13	9:40	3,241
March 14	9:30	2,808
March 15	9:25	2,754
March 16	9:40	3,128
March 17	8:55	3,027
March 18	10:15	3,058
Total	57:25	18,016

Porto Bello Crusher.

DATE.	Hours worked.	Cubic Yards.
March 13	6:05	2,494
March 14	7:42	3,295
March 15	7:16	3,737
March 16	6:09	3,504
March 17	6:27	3,564
March 18	6:34	3,288
Total	40:13	19,882

The record of March 15 is the highest made by this plant.

Visits of Congressmen.

The Congressional party which came to the Isthmus on March 13, returned to the States on March 19, after spending six days inspecting the work of the Canal. It was composed of the following members: W. P. Borland, W. O. Bradley, C. H. Burke, J. W. Gudger, Jr., Paul Howland, J. R. Knowland, J. W. Langley, E. W. Martin, J. A. Martin, Bird S. McGuire, M. A. Morrison, F. W. Mondell, J. C. Needham, A. B. Rouse, H. Steenerson, S. W. Smith, E. T. Taylor, R. Y. Thomas, F. E. Warren. A second party sailed on the *Panama* from New York and is due to arrive on the Isthmus on March 24. In this party are: Congressmen Young and wife, Alexander and wife, and Taylor and wife.

Special Trains on Saturday Night.

A Saturday night train service between Colon and Panama will go into effect on March 25. The schedule is published elsewhere in this issue.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

About 58 per cent of the concrete for the system of three twin locks at Gatun has been laid, the exact amount in place at the close of work on March 18, being 1,199,691 cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending March 18, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily. and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
March 13	2,162	37:30	6	794	8:40	2	224¾	3,180¾
March 14	2,334	39:44	6	670	8:40	2	210¾	3,214¾
March 15	2,066	28:48	6	604	8:04	2	152	2,822
March 16	2,146	34:16	6	576	8:40	2	171¼	2,893¼
March 17	2,312	38:40	6	772	8:40	2	213½	3,297½
March 18	2,406	37:23	6	682	8:40	2	206½	3,294½
*Portable mixers				348				348
Total	13,426	216:21	6	4,446	52:00	2	1,178¾	19,050½
Previously reported								1,180,640¾
Grand total								1,199,691¼

*The 348 yards shown for the portable mixers are reinforced concrete, and were placed on the following days: March 13th, 48 yards; March 14th, 61 yards; March 15th, 59 yards; March 16th, 61 yards; March 17th, 76 yards; March 18th, 43 yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is over 69 per cent completed, 585,453 cubic yards, out of a total of 837,400, having been placed at the close of work on March 18. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. ⅓-cubic yard mixer			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete Placed.	Hours worked.	No of mixers.		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
March 13.	860	14:00	2	490	10:83	2	125	7:75	1		1,475
March 14.	838	15:00	2	576	13:50	3	119	7:50	1		1,533
March 15.	974	15:00	2	656	16:00	3	122	8:00	1		1,752
March 16.	822	15:00	2	494	13:00	3	150	8:33	1		1,466
March 17.	920	14:00	2	656	15:33	3	148	8:67	1		1,724
March 18.	1,004	15:67	2	640	14:00	3	142	7:50	1		1,786
Total	5,418	88:67	2	3,512	82:66	2.83	806	47:75	1		9,736
Previously reported										4,178	575,717
Grand total										4,178	585,453

MIRAFLORES LOCKS.

Over 11 per cent of the concrete for the system of locks at Miraflores was in place on March 18, the total amount on that date being 158,191 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	AUXILIARY PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. ⅓-cubic yard mixers.			AUXILIARY PLANT. ⅓-cubic yard mixer.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
March 13.	204	4:50	2	389	26:00	4	48	6:00	1	5	646
March 14.	188	4:00	2	698	37:25	5	78	6:50	1	20	984
March 15.	220	5:00	2	719	36:50	5	77	6:00	1	15	1,031
March 16.	226	5:00	2	540	27:00	4	42	3:50	1	5	813
March 17.	352	8:00	2	785	40:25	6	68	5:50	1	5	1,210
March 18.	320	7:33	2	801	37:75	5	85	7:00	1	15	1,221
Total	1,510	33:83	2	3,932	204:75	4.83	398	34:50	1	65	5,905
Previously reported										3,610	152,286
Grand total										3,675	158,191

RED CROSS ENDOWMENT.

Efforts to Raise Shapes Apportioned to Canal Zone.

President Taft, as president of the American National Red Cross, has undertaken to raise an endowment fund of $2,000,000 to be immediately available in cases of calamity. Five hundred thousand dollars have already been raised, and the State chapters are endeavoring to supply the balance. The Canal Zone Chapter has been called upon for $700, and a series of entertainments will be held by the various districts to raise that amount. The first of these will be a vaudeville entertainment at the National Theatre, Panama, on Friday evening, April 7, under the auspices of the Ancon, Pedro Miguel, Culebra, Empire, Las Cascadas and Bas Obispo districts. Tickets for this entertainment will be on sale at the offices of the district quartermasters, the Commission clubhouses, the Tiovli Hotel, and at Vibert & Dixon's store, Panama. Orders for boxes may be sent by mail to Dr. A. J. Orenstein, chairman, Ancon district, Ancon, and should be accompanied by check or post office money order for $10, United States currency.

The Pedro Miguel district recently gave a moving picture show in aid of the endowment which netted $20.40.

A statement of the financial condition of the Canal Zone Chapter, American National Red Cross, for the month of February, follows:

RECEIPTS.

February 1. Balance on hand....	$1,804.24	
February 2. Eighty-seven and one-half per cent of net proceeds of sale of Christmas seals........	53.92	
February 28. Membership dues received during month........	71.00	
February 28. Membership dues received in connection with Red Cross Ball, February 18.......	733.00	
February 28. Other receipts from Red Cross Ball..............	438.27	
		$3,100.43

DISBURSEMENTS.

February 4. Postage (Letter of W. N. Windes attached)..........	$0.41	
February 1. Relief of American in Colon Hospital..............	25.00	
February 1. Postage, receipt attached......................	1.00	
February 8. Remitted to treasurer, National Red Cross, Washington, D. C., one-half membership dues for quarter ending January 31.......................	79.00	
February 23. Relief of family of Spanish contract laborer at Chagres camp................	5.00	
February 23. Postage, receipt attached......................	2.00	
February 27. Relief of destitute American at Gatun...........	25.00	
February 28. Ribbon for badges, for Ball.....................	.23	
Total disbursements................		$137.64
February 28. Balance on hand............		$2,962.79

JOHN L. PHILLIPS, *Treasurer.*

Approved: C. A. DEVOL, *Chairman.*

Obituary.

John M. Hobrough died on March 13 as the result of injuries received at the explosion of a gasoline tank at Toro Point on the same day. He was 23 years of age, single, and had been on the Isthmus three and one-half months. His father, Robert H. Hobrough, lives at Everett, Wash.

Mrs. Wm. Shackleton, the wife of Wm. Shackleton living at Bas Obispo, died on March 13 at Ancon Hospital. She was 41 years of age and had been on the Isthmus six months.

Two Men Killed in Dynamite Explosion.

Two men were killed and seven injured in an explosion of dynamite at Gatun spillway on the morning of March 16. The dynamite gang had been loading a hole through a pipe in the borrow pit north of the spillway and were withdrawing the pipe when the explosion occurred. Clifford Boyce and James Dunkley, negro laborers, were killed. The injured men were also negro laborers, and four of them, Archie Wright, Andrew Maynard, Oliver Grace and Edrick Trotman, were so badly injured that they were removed to Colon Hospital. Joseph Rock and Berkley Williams were cared for in the sick camp at Gatun, and Sinclair Hunt was so slightly hurt that he returned to work.

PERSONAL.

Charles Francis Adams, wife and daughter of Boston, Francis D. Millet and wife of New York, Colonel R. H. I. Goddard and son of Providence, O. H. Tittman and wife of Washington, Lieut.-Gen. S. B. M. Young, and Major M. T. Davis, are in Panama inspecting the Canal work. Maj.-Gen. Alexander Mackenzie, Major W. V. Judson and wife, Major S. A. Cheney, and George R. Putnam are among the passengers on the *Panama*, due to arrive in Cristobal on March 24.

Dr. J. P. Perry has returned from his annual leave in the States.

Changes in Canal Zone Judiciary.

A cable message from Washington under date of March 18 announces the appointment of W. W. Warwick, formerly Examiner of Accounts in the Commission service, and Thomas E. Brown, Jr., formerly district judge at Cristobal, as associate justices of the Canal Zone Supreme Court. W. H. Jackson of New York, has been designated for the position of district judge to succeed Judge Brown.

K. of P.

Paradise Lodge No. 6, Knights of Pythias, of Paraiso, will hold a "Good of the Order" supper, for Knights only, in the Paraiso lodge hall on Saturday evening, April 8. A special train will leave Panama at 7.30, and from Gorgona at 7.15 p. m., returning after the supper.

Spanish War Veterans.

Colonel Sibert Camp, Spanish War Veterans, will hold a regular meeting in the Gatun clubhouse on Saturday, March 25. The charter will not be closed until after this meeting, and all Spanish War veterans desiring to become charter members should be present.

Women's Clubs.

The Pedro Miguel Woman's Club will hold a card party and reception on Saturday evening, March 25, in honor of Mrs. Walter H. Jennings, a charter member who is leaving the Isthmus. On March 15 the social meeting of the club was held at the home of Mrs. T. T. Curran, at Empire. The next business meeting will be held on March 22, after which there will be no business meetings for three months. The social sessions will be held as usual on the second and fourth Wednesdays in each month.

The home of the president of the Gorgona Woman's Club was thrown open for the exhibit of the federation pictures on Wednesday, Thursday, and Friday of last week. The large pictures were hung and the books and portfolios were placed on tables. On Wednesday evening, the president entertained the members of the Rebekah lodge. There was a large attendance at the meeting on Thursday afternoon. The program was informal and consisted of readings on the 12 greatest pictures in the world, and short sketches of painters. Refreshments were served on the veranda, which was decorated with palms and flags.

There will be an initiation of 16 candidates in the Rebekah lodge, Gorgona, on Friday evening, March 24.

Fireproof Construction in Colon.

The fill in the newly improved section of Colon is approaching completion, and, it is expected that the construction of new buildings will be started there within the next four months. The Health Officer of Colon has called attention to the desire of a number of the property owners to have a law enacted by the municipal authorities limiting buildings in this new district to those of fireproof construction. There is no field rock available at Colon, as at Panama, and in order to erect buildings of a permanent character, materials will have to be brought from a distance.

Coal Screen.

A large screen to help in sorting coal at the receiving pile at Mount Hope is being constructed at Gorgona shops. It will be erected at the hoist by which the coal is conveyed from the holds of ships to the storage piles. Up to the present time lump coal for domestic use has been sorted by hand. All the coal at present used is bituminous.

Missing Men.

Any one having information regarding the whereabouts of Nathan Gordon, who is supposed to be on the Isthmus, is requested to communicate with the General Superintendent, P. R. R., Colon, R. P.

At a recent meeting of Paraiso Court, No. 5, Independent Order of Panamanian Kangaroos, resolutions of sympathy were adopted on the death of R. C. Smith, a member of the court.

The Cristobal Marine Association and the Cristobal Catholic Club have passed resolutions of sympathy for J. K. Gibson, on the death of his wife.

Cold Storage Prices.

There are no changes in the prices of cold storage articles from those quoted in last week's issue of THE CANAL RECORD.

Misdirected Letters.

Ancon, C. Z., March 22, 1911.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received in the office of the Director of Posts, and may be secured upon request of addressee:

Arner, Otto
Ashley, Kendall Morton
Benninger, M. P.
Carroll, James
Corsica, J. F.
Dominguez, Domingo
Dougherty, Bruce T
Duffy, John J.
Edwards, Mrs. Howard
Ford, Wesley
French, William S.
Gaillot, A. G.
Geiger, J. F.
Gloson, R. L.
Hackenburg, Mrs.
Nahck, Thos. S.
Hamel, Will
Hobbs, Louise K.
Hodina, Jo
Hyos, Valencia E.
Johns, Carl
Kehoe, Joseph
Kieman, J. C.
King, Miss Bella
Lewis, Mrs. E. B.
Marcotte, H. J.
Martin, Allmon
Martyn, E. M.
McGowan, W. H.
McJimpsey, Alex.
McLeod, John R.
Morris, T. J. (pkg.)
Nichel, C.
O'Brien, James M.
Overmeyer, Hon. John
Painter, Mrs. Judah
Rice, Miss Eva C.
Ross, W. A.
St.Clair, Mrs. Dan
Sehr, Mr. Michael
Seymour, James
Sherwood, Charles A.
Smith, Jesse T.
Smith, George (pkg.)
Snell, C. W. I.
Stafford, Mrs. P. F.
Stearns, Frank E.
Turner, Bert D.
Wertz, Carl A.
Williams, Mrs. Clarena
Winford, Mrs. Edith T.
Woodward, Miss E.

CANAL WORK IN FEBRUARY.

Monthly Report of the Chairman and Chief Engineer to the Secretary of War.

Culebra, C. Z., March 15, 1911.

The Honorable the Secretary of War,
Washington, D. C.

Sir: I have the honor to submit the following report of operations on the Isthmus for the month of February, 1911:

Department of Construction and Engineering.

The following table summarizes the principal items of construction work accomplished by the Atlantic, Central and Pacific Divisions during the month:

Item.	Unit.	Atlantic.	Central.	Pacific.	Total.
Work excavation, dry	Cubic yards	97,613	1,624,584	35,016	1,757,213
Work excavation, wet	Cubic yards	455,318	4,304	474,201	933,823
Total work excavation	Cubic yards	552,931	1,628,888	509,217	2,691,036
Plant excavation, dry	Cubic yards	....	1,870	....	1,870
Plant excavation, wet	Cubic yards	21,268	....	....	21,268
Total plant excavation	Cubic yards	21,268	1,870	....	23,138
Total Canal excavation	Cubic yards	574,199	1,630,758	509,217	2,714,174
Material placed in dams	Cubic yards	512,741	....	119,739	632,480
Concrete laid	Cubic yards	78,712	....	57,907	136,619
Explosives used	Tons (Gross)	62.00	197.70	27.05	286.75
Rock drilled	Feet	64,212	392,325	45,869	502,406
Tracks removed	Miles	....	16.47	....	16.47
New tracks laid	Miles	1.66	20.82	1.58	24.06
Rock crushed	Cubic yards	72,240	396	61,274	133,910
Cement used	Barrels	82,208	743	59,201	142,152
New roads built	Miles	2.63	....	1.44	4.07
Water mains laid	Feet	3,322	963	1,868	6,153
Sewers laid	Feet	394	326	600	1,320
Open drains and ditches dug	Feet	17,350	10,798	....	29,148
Average daily force	....	8,334	8,919	4,278	21,531
Average rainfall	Inches	2.00	1.11	2.31	1.46

Atlantic Division.

GATUN LOCKS.

Excavation—Shovel excavation during the month was continued in the lower lock, and outside the Canal prism, for the purpose of obtaining impervious material for back fill. A total of 68,023 cubic yards of material was removed. Of this quantity, 24,393 cubic yards were excavated for back fill. On February 28 the total material removed amounted to 5,728,864 cubic yards. The shovel excavation in the locks was 97.3 per cent completed, the channel excavation in the lower lock 85 per cent completed, and the excavation of culvert trenches by crane, 55 per cent completed.

Back Fill—Back filling behind the walls of the upper and middle locks was continued. The quantity placed during February aggregated 41,153 cubic yards, increasing the total to 301,870 cubic yards. On February 28 the back fill was 25.07 per cent completed.

Receiving and Issuing Material—The receipts of material during the month exceeded the consumption, with the exception of sand, the consumption of which exceeded the receipts by 1,025 cubic yards.

Mixing and Placing Plants—These plants were kept in satisfactory operation during the month. Three portable mixers were in use intermittently during the month, two being employed in placing concrete in operating tunnels, and one in building a molding platform for reinforced concrete piles.

Power Plant and Pumps—The operation of the power plant and pumps during the month was satisfactory.

Iron and Steel Work—During the month the setting of steel in Stoney gate valves was continued, and the setting of the sills of the lower gates of the middle lock was completed.

Concrete Work—There was a decrease of 815 cubic yards in the amount of concrete laid, as compared with the figures for the preceding month. The daily average for the 23 working days was 3,135 cubic yards, as compared with a daily average during January of 2,916 cubic yards. The total amount of concrete placed during the month was 72,103½ cubic yards, including 5,050¾ cubic yards of large stone. The bucket measurement exceeded the place measurement by 20¾ cubic yards. Of the total concrete, 13,524 cubic yards were placed in the upper lock, 47,119½ cubic yards in the middle lock, and 11,460 cubic yards in the lower lock. The concrete work for the entire lock system was 55 per cent completed at the end of February.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS, GATUN LOCKS.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)	12.22	8.50
Average number of hours per day worked per strand of cableway laying concrete and large stone (actual working time)	8.19	....
Average number of mixers per day	6.00	2.00
Average hourly output per mixer, (actual working time) cu. yds.	58.73	58.40
Average amount of concrete and large stone laid per hour, per strand of cableway, (actual working time) cu. yds.	35.01	....
Large rock laid, cu. yds.	4,385¾	665
Concrete laid, cableways, cu. yds.	49,213	....
Concrete laid, through chute into dump cars, cu. yds.	5,304	....
Concrete laid, derrick, crane and lift, cu. yds.	....	10,950
Concrete laid, portable mixers	....	1,606½
Total amount concrete and large rock laid, cu yds.	58,902¾	13,221½

Concrete from the auxiliary plant is placed by derricks, crane, and a lift. It is, therefore, impracticable to estimate the average amount placed per hour by each of these units.

GATUN DAM.

Construction during the month increased the total fill, as determined by cross sections of the material in place, by 512,741 cubic yards, making the total amount in place 12,276,078 cubic yards.

Hydraulic Fill—The dredges increased the hydraulic fill by 301,733 cubic yards. The total hydraulic fill in place on Febraury 28 was 6,290,960 cubic yards.

Dry Fill—The material received from the Central Division, the locks, the spillway, and the plant excavation, amounting to 211,008 cubic yards, was placed on the north and south toes of the dam, east and west of the spillway, making the total dry fill in place 5,985,118 cubic yards.

GATUN SPILLWAY.

Excavation—In preparing the foundation of the spillway dam, 6,881 cubic yards of rock were excavated by hand behind the east and west coffer dams, increasing the total spillway excavation to 1,578,006 cubic yards.

Concrete—The construction piers of the spillway dam were completed to elevation plus 45, and the building of the ogee monoliths and the heavy floor below was continued behind the east and west coffer dams. The amount of concrete placed during the month aggregated 6,609 cubic yards, which increased the total to 122,387 cubic yards.

HARBOR AND CHANNEL SECTION.

Excavation Below Sea Level at Mindi—During the month 4,504 cubic yards of earth and 37,398 cubic yards of rock were removed from the prism by two 70-ton steam shovels working a total of 42 days. In addition, 5,200 cubic yards of mud were sluiced from the cut.

Dredging from the Ocean to Mindi—Five dredges removed 236,881 cubic yards of earth and 39,232 cubic yards of rock from the Canal prism. In addition, the dredge *Mindi* removed 21,263 cubic yards of earth from the channel to, and in front of, Dock No. 14. On February 28th, 40 feet of water could be carried from zero to zero plus 3,900 feet; 30 feet to mile 4 plus 800 feet; 20 feet to mile 5 plus 2438.9 feet, at the junction with the French canal.

Dredging from Mindi to Gatun Locks—The dredge *Sandpiper* removed 179,205 cubic yards from the Canal prism at mile 6 plus 3,300 feet to mile 6 plus 400 feet.

PORTO BELLO.

PERFORMANCE OF ROCK CRUSHER PLANT.

Length of working days—hours	
From 1st to 14th, inclusive	10:00
From 15th to 28th, inclusive	8:00
Average number of hours worked per day—	
From 1st to 14th, inclusive	7:68
From 15th to 28th, inclusive	6:48
Average number of cubic yards per hour of working day—	
From 1st to 14th, inclusive	334.3
From 16th to 28th, inclusive	365.0
Average number of cubic yards per working hour—	
From 1st to 14th, inclusive	435.4
From 15th to 28th, inclusive	450.8
Maximum day's output, (10 hours) 9 hours 34 minutes actual working time, cu. yds.	4,042.0
Maximum day's output, (8 hours) 7 hours 31 minutes actual working time, cu. yds.	3,339.0
Average day's output, (23 days) cu. yds.	3,141.0
Average hourly output, (193 hours 30 minutes) cu. ydss.	373.0

SAND, STONE AND CEMENT SERVICE.

In connection with this service plant steamed 11,578 miles, handled 842 barges, and carried 2,068 passengers.

TORO POINT.

Colon Breakwater—Forty thousand four hundred and sixty-six cubic yards of material were excavated, of which amount 1,635 cubic yards were placed in track fill, and 38,831 cubic yards in breakwater fill. The double track trestle was extended 370 linear feet. On March 1 the trestle extended 3,110 feet from shore. The total amount of rock dredged and dumped on the west breakwater to February 1, 1911, was 430,056 cubic yards. During the month 39,232 cubic yards of rock were dredged and dumped, increasing the total to 469,288 cubic yards. The amount of dry fill placed to March 1 was 188,510 cubic yards.

NOMBRE DE DIOS.

During the month 76 barges containing 33,513 cubic yards of sand were shipped to Gatun.

MUNICIPAL ENGINEERING.

The reservoirs, water mains, sewers, roads, and oil pipe lines were maintained and extended as required to facilitate construction work. Work was continued on the Colon municipal improvements.

Central Division.

During the month of February the total amount of material excavated in the Central Division was 1,630,758 cubic yards, of which 477,477 cubic yards were classified as earth and 1,153,281 cubic yards as rock. Of this quantity 1,600,597 cubic yards were removed by steam shovels, 5,096 cubic yards by scraper, 16,699 cubic yards by bucket cranes, and 870 cubic yards by hand. Contractors removed 4,304 cubic yards by sluicing, and 3,192 cubic yards by hand. Of the total, 1,600,372 cubic yards consisted of primary excavation for the Canal prism, 5,736 cubic yards permanent diversion useful after the Canal is completed, and 22,780 cubic yards of silt deposited in completed sections of prism. The total work excavation amounted to 1,628,888 cubic yards. In addition, 1,870 cubic yards of gravel were excavated outside of the canal prism for ballast and concrete use.

The daily average number of steam shovels at work during the month was 48.41, and the total number of shovel days was 1,114, as compared with 47.68 shovels at work during the month of January, with 1,192 shovel days.

For comparison with the work done by steam shovels during the corresponding month of the previous year, the following table has been prepared:

Period.	Excavated by shovels.	Classification of material.		Av. No of shovels at work	Working days	Av. yards per shovel day.
		Rock.	Earth.			
1910:	*Cu. Yds*	*Cu. Yds.*	*Cu. Yds.*			*C. Y.*
Feb....	1,503,223	1,126,501	376,722	51.35	23	1,272 8
1911:						
Feb....	1,600,598	1,150,353	450,224	48.41	23	1,436 8

Rainfall at Empire: 1910, .76 ins.; 1911, .55 ins.

The above table shows the average output per shovel to be 12.88 per cent greater in February, 1911, than in the corresponding month of the previous year.

The total amount of material excavated from the prism in the Culebra section of the Central Division in February, 1911, 1,403,602 cubic yards, was the highest record in that section for the month of February, the previous high record for the month having been in February, 1910, when 1,259,173 cubic yards were removed.

The total estimated amount of material to be removed in the Central Division was 97,125,018 cubic yards, and up to March 1, 1911, 71,033,522 cubic yards had been removed, leaving 26,091,496 cubic yards to be removed in order to complete all excavation in the Central Division. From these figures it will be seen that 73.14 per cent of all excavation in the Central Division had been completed up to the close of the month of February, and 26.86 per cent remained uncompleted.

Considering the two sections which compose the Central Division, the excavation completed and that to be completed at the close of February operations, were as follows:

CULEBRA SECTION.

	Cubic Yards.
Completed	59,671,665
To be completed	24,515,059

CHAGRES SECTION.

Completed	11,361,857
To be completed	1,576,437

From the above figures it will be seen that the Culebra section, locally known as Culebra Cut, was 70.88 per cent completed, with 29.12 per cent to be completed; the Chagres section was 87.82 per cent completed, with 12.18 per cent to be completed.

During the month 780 cubic yards of material were hauled from the Canal prism and dumped in the embankment for the roadbed of the relocated Panama railroad in the vicinity of Pedro Miguel. The total amount of spoil from the Central Division used for this purpose at the close of the month was 3,743,354 cubic yards. The Central Division also delivered at Gatun 193,479 cubic yards of rock and earth for use in the construction of the dam, making the total for this purpose at the end of February 2,906,534 cubic yards.

The daily average number of laborers at work on the whole division during the month was 7,991, and the daily average number of gold employes 928.

Pacific Division.

DISTRICT NO. 1—LOCKS AND DAMS.

Excavation—The total excavation during the month amounted to 35,016 cubic yards.

Filling and Embankment—During February, no additional dry filling was added to the prism of the west dam at Pedro Miguel, the total amount of material in place at the close of the month remaining at 260,852 cubic yards, as previously reported. The back fill at Pedro Miguel was increased by 31,399 cubic yards, the total in place at the end of the month amounting to 92,558 cubic yards.

At Miraflores, 32,404 cubic yards were added to the dry fill in the toes, and 87,335 cubic yards to the hydraulic fill in the core of the west dam, making the totals at the end of the month 666,952 cubic yards and 471,290 cubic yards respectively. The back fill was increased by 1,280 cubic yards, making the total amount in place at the end of the month 135,885 cubic yards.

PEDRO MIGUEL LOCKS.

The back filling of the west wall was continued, as was also the work of dismantling berm crane "G", the cantilevers being removed and taken to Miraflores where the erection of one of them was commenced on the west berm crane already partly installed. The placing of anchor bolts and castings for Stoney valves, and other iron, was continued, about 935,000 pounds of iron being placed during the month.

Concrete Work—The concrete work at Pedro Miguel for February showed a decrease of 1,502 cubic yards over the figures for January. The total amount placed was 37,011 cubic yards, including 26 cubic yards of large stone. The concrete was placed as follows: 10,647 cubic yards in the east wall; 500 cubic yards in the east head wall; 8,656 cubic yards in the west wall; 241 cubic yards in the west head wall; 16,340 cubic yards in the center wall; and 627 cubic yards in the floor.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT PEDRO MIGUEL.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)...	8.00	8.00
Average number of hours per day, per unit, worked laying concrete and large stone (actual working time)...............	5.23	3.70
Average number of mixers per day........................	2.00	3.36
	Cu. Yds.	*Cu. Yds.*
Average hourly output per mixer (actual working time)........	74.44	38.02
Average amount of concrete and large stone laid per hour, per chamber crane (actual working time)........................	59.00	....
Large rock laid................	8.00	18.00
Concrete laid..................	28,399.00	8,586.00
Total concrete laid..........	28,407.00	8,604.00

Auxiliary plant consists of three 2-cubic yard mixers, and one ⅓-cubic yard mixer, and locomotive cranes and derricks averaging 2.83 units per day for the month of February.

MIRAFLORES LOCKS.

Work on the west storage trestle at Miraflores, and the filling of the dike at the Agua Dulce pumping station were continued. The excavation of rock in the lower lock site was commenced.

Concrete Work—The total amount of concrete and large stone laid was 20,896 cubic yards, as compared with 24,018 cubic yards during January. The concrete was placed as follows: 12,623 cubic yards in the east wall; 7,406 cubic yards in the center wall; and 867 cubic yards in the floor.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT MIRAFLORES.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)..	8.00	8.00
Average number of hours per day per unit, worked laying concrete and large stone (actual working time).............	7.55	6.25
Average number of mixers per day..........................	....	4.65
	Cu. Yds.	*Cu. Yds.*
Average hourly output per mixer (actual working time)........	....	13.19
Average amount of concrete and large stone laid per hour per chamber crane (actual working time).......................	55.08	....
Large rock laid................	217.00	280.00
Concrete laid..................	9,344.00	11,055.00
Total concrete laid..........	9,561.00	11,335.00

Permanent plant consists of one berm crane operating one boom, placing concrete.

Auxiliary plant consists of two 2-cubic yard mixers, five ½-cubic yard mixers, and one ⅓-cubic yard mixer; ½-yard and ⅓-yard mixers discharged directly into forms.

DISTRICT NO. 2—DREDGING.

The following is a statement of the output of the five dredges which were in operation during the month, and of the amount of material excavated hydraulically:

DREDGE.	Type.	WORK.		PLANT.		Total.	Remarks.
		Earth.	Rock.	Earth.	Rock.		
		Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*	
Cardenas....................	Dipper....	31,760	18,967	....	....	50,727	Place measurement
Marmot......................	Ladder....	22,128	....	83,583	....	105,171	Place measurement
Mole........................	Ladder....	7,150	4,667	....	....	11,817	Place measurement
Badger......................	Ladder....	67,875	713	....	....	68,588	Place measurement
Culebra.....................	Suction....	233,606	....	17,650	....	251,256	Scow measurement
Total	....	362,519	24,347	101,233	....	488,099	
Hydraulic excavation.....	....	*87,335	....	....	....	87,335	Place measurement
Grand Total	....	449,854	24,347	101,233	....	575,434	

*Excavated from lower lock site at Miraflores.

CHAMÉ SAND EXCAVATION.

Approximately 39,300 cubic yards of sand were excavated at Punta Chamé and delivered at Balboa.

DISTRICT NO. 3—MUNICIPAL AND SANITARY ENGINEERING.

The reservoirs, watermains, sewers, roads, and oil pipe lines were maintained and extended as required, to facilitate construction work. Work was continued on the municipal improvements in the city of Panama.

DISTRICT NO. 4—ANCON QUARRY.

PERFORMANCE OF ROCK CRUSHER PLANT.

	Hours.
Length of working day	12:00
Average number of hours per day (actual working time)	8:87
	Cu. Yds.
Average amount crushed per hour of working day	222.00
Average amount crushed per working hour	300 36
Total output for the month	61,274.00

Relocation of Panama Railroad.

During the month 252,815 cubic yards of material were excavated, making the total excavation at the close of the month 5,762,375 cubic yards, and 252,815 cubic yards of material were placed in embankment, making a total of 11,126,946 cubic yards used for this purpose.

For comparison with the work done by steam shovels during the preceding month, and during the corresponding month of the previous year, the following table has been prepared:

Period	Excavated by shovels.	Classification of material.		Av. No. of shovels at work.	W'k'g days.	Av. yards per shovel day.
		Rock.	Earth.			
1910:	*Cu Yds.*	*Cu. Yds.*	*Cu. Yds.*			
Jan	214,411	71,075	143,336	7.91	23	1,179
1911:						
Jan	251.175	162,390	88,785	6 00	25	1,675
Feb	256,615	180,600	76,015	6.22	23	1,795

During the month 1,070 feet of temporary trestles were driven, and work on the bridges and culverts was continued. No permanent track was laid during the month, the total of 70-pound and 90-pound permanent track remaining at 157,744 linear feet and 18,997 linear feet respectively, as previously reported. The total force averaged 2,210 men.

Quartermaster's Department.

Labor—The supply of skilled and unskilled labor continued satisfactory during the month.

Materials and Supplies—The inventory of the Panama railroad storehouse was completed. The value of the material taken over by the Commission was $445,908.24 (P.R.R. value). The value of obsolete and unserviceable material amounted to $20,534.73; this material will be considered the property of the Panama railroad. The figures given are subject to correction after final check is made. The greater portion of the stock from the storehouse has been moved to the Mount Hope depot.

The total value of material received by the Commission during the month was $200,000 less than during the preceding month. The value of material received for stock and the value of material ordered from the United States was likewise less. The value of the material received was $583,849.95. Cargo was brought to the Isthmus in 28 vessels, and consisted of 460 separate shipments, approximately 60 per cent of which were handled direct from dock to destination on the Isthmus, other than Mount Hope depot. The total weight of cargo received, exclusive of lumber, cross ties, and piling, aggregated 33,381 tons. Lumber was delivered in the amount of 226,739 feet, board measure, and 28,505 cypress ties and 927 pieces of piling were received.

Subsistence Department.

The operation of the European laborers' messes, the colored laborers' kitchens and the line hotels showed a net profit of $2,063.94. The operation of the hotel Tivoli showed a net profit of $8,594.77, and there was a net profit on restaurants, penitentiary and dredges of $253.17. The net profit on subsistence operations was $10,911.88.

Department of Civil Administration.

COURTS.

One criminal case was disposed of in the Supreme Court of the Canal Zone; 22 civil and 18 criminal cases in the Circuit Courts, and 51 civil and 476 criminal cases in the District Courts.

DIVISION OF POSTS, CUSTOMS AND REVENUES.

Money order sales for February amounted to $445,086.97, and the fees to $1,945.99. Receipts from stamp and card sales, and newspaper postage aggregated $6,603.41. The total collection of revenues made by the division was $16,501.10, and the collection on account of court fines, costs and fees, $2,01929.

Twenty vessels entered at and 23 vessels cleared from the port of Ancon; and 20 vessels entered at and 22 vessels cleared from the port of Cristobal.

DIVISION OF POLICE AND PRISONS.

The total number of persons arrested was 486, of whom 444 were men and 42 women. Forty-five nationalities were represented. The total number of arrests for the month was an increase of 102, as compared with January. Five convicts were committed to the penitentiary, and 10 were discharged, leaving 139 in confinement at the close of the month. The cost of guarding and subsisting the convicts was $2,373.55, and the value of their work on the Canal Zone roads $1,884.20.

DIVISION OF FIRE PROTECTION.

Twenty-seven fires were reported in the Canal Zone during the month, a decrease of 17, as compared with January. The damage to Commission property was $290, and to Panama railroad property $3,136.03.

DIVISION OF PUBLIC WORKS.

In the city of Panama the average daily consumption of water was 1,266,165 gallons, and in Colon 986,572 gallons.

The usual inpsection and maintenance work of this division was performed during the month.

DIVISION OF SCHOOLS.

The total enrolment in the white schools during the month was 1,087 and the average daily attendance 914.2, or 84 per cent of the enrolment; and in the colored schools the total enrolment was 1,293 and the average daily attendance 611.9, or 47 per cent. Forty two white and 24 colored teachers were employed in the division on February 28.

Department of Sanitation.

The total number of deaths from all causes among employes was 41. These were divided as follows: From disease, 26, and from violence, 15, giving the annual average per thousand of 6.27 and 3.61, respectively.

The annual average death rate per thousand among employes for the month of February in previous years since American occupation, was as follows:

1905	14.05
1906	29.09
1907	30.74
1908	12.80
1909	9.42
1910	8.75

The annual average death rate per thousand in the cities of Panama, Colon, and the Canal Zone, including both employes and nonemployes, was 18.60.

The annual average death rate per thousand for the month of February among the same class of population for previous years, was as follows:

1905	42.07
1906	43.96
1907	36.07
1908	21.40
1909	18.59
1910	17.50

Segregating the whites from the blacks, the annual average death rate per thousand from disease among employes was: For whites, 5.67; blacks, 6.47; giving a general average of 6.27. For the same month during 1909, the annual death rate per thousand from disease was: Whites, 6.85; blacks, 6.97, giving a general average of 6.93; and for the same month during 1910, whites, 520; blacks, 4.59; giving a general average of 4.73.

Among employes during February, 1911, deaths from the principal diseases were as follows: Chronic nephritis, 4; hemoglobinuric fever, 1; organic disease of the heart, 3; lobar pneumonia, 3; tuberculosis, 3; dysentery, 2; leaving a balance of 10 deaths from all other diseases, and 15 deaths from external violence.

An epidemic of measles of a mild form has existed on the Isthmus for several weeks.

No cases of yellow fever, small pox, or plague were brought to or originated on the Isthmus during the month.

Respectfully,
Geo. W. Goethals, *Chairman.*

OFFICIAL CIRCULARS.

Children's Names on Applications for Transportation.

Culebra, C. Z., March 17, 1911.

Circular No. 175-E:

In the future, in order to comply with the requirements of the Bureau of Immigration and Naturalization in connection with outward bound passengers from the port of New York, it will be necessary to furnish this office the *names* of all children for whom transportation is desired, as well as their ages.

Geo. W. Goethals,
Chairman and Chief Engineer.

Interchange of "Extra" Men.

Culebra, C. Z., March 16, 1911.

Circular No. 376:

Whenever the list of "extra" employes of any division or department of the Isthmian Canal Commission, the Panama railroad and the relocation is exhausted, from any combination of circumstances, the necessities will be met by temporarily transferring men from other divisions which are able to spare same, in which case the expense of such borrowed men will be borne by the division or department obtaining their services. Care should be exercised to keep the number of "extra" men in each division down to a minimum.

Geo. W. Goethals,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Estate of Gregorio Perez.

Creditors of the above estate are hereby notified to file their claims with the Circuit Court Clerk, Ancon, or the same will be barred at the expiration of the minimum term fixed by the Code.

LOST—On Sunday, March 12, a No. 3-A kodak in black leather case well worn; carrying strap broken and khaki-colored string substitued. Finder please leave at Cristobal police station or district quartermater's office, Gatun, where a suitable reward will be paid.

BASEBALL.

PANAMA CANAL LEAGUE.

SUMMARIES OF GAMES, MARCH 19.

Atlantics	AB.	H.	PO.	A.	E.	Ancon.	AB.	H.	PO.	A.	E.
Hennessy,ss	2	1	2	2	0	RDren'n,2b.	3	1	3	1	3
Edwards,1b	4	2	10	2	2	LDre'n,rf,cf	4	0	1	1	0
Reeves,2b..	4	0	2	3	0	Pearman,3b	4	1	1	3	0
Emerson,lf.	4	2	1	0	0	Caldwell,c..	3	0	5	3	0
WSulli'n,cf.	4	1	1	1	0	Nygren,1b..	3	2	9	0	3
TSulli'n,3b.	4	1	4	0	1	Hunter,ss..	3	0	2	3	0
Yingling,c.	3	0	6	2	2	Russell,cf,p.	3	0	1	2	0
Horrigan,rf	4	0	1	1	0	Frampton,lf	3	0	1	0	0
Davis,p...	4	2	0	4	0	Hull,p,rf...	3	0	1	1	0
Total...	33	9	27	15	5	Totals...	29	4	24	14	6

Atlantics..........	1	0	0	5	0	2	0	0	x	—8
Ancon..............	0	0	1	0	0	0	1	0	0	—2

Runs—Atlantics: Hennessy (2), Emerson, W. Sullivan, T. Sullivan, Yingling, Davis (2); Ancon: Pearman, Frampton. Runs earned—Ancon 1,; Atlantics, 4. Two base hits—R. Drennan, T. Sullivan. Emerson (2). Home run—Pearman. Sacrifice hits—R. Drennan, Hennessy, Yingling. Stolen bases—R. Drennan, Hennessy, Edwards, W. Sullivan, Yingling, Davis (4). First base on errors—By Atlantics, 2; by Ancon, 6. Bases on balls—Off Davis, 1; Russell, 1. Struck out—By Davis, 3; by Russell, 3; by Hull 3. Left on bases—Ancon, 1; Atlantics, 3. Double plays—Horrigan to T. Sullivan. Passed balls—Caldwell, 1; Yingling, 1. Umpire—Booth. Time of game—1.45. Scorer—J. P. Mead.

C.-S.	AB.	H.	PO.	A.	E.	Empire.	AB.	H.	PO.	A.	E.
Bucha'n,cf.	4	1	1	0	0	Bryan,3b...	4	0	3	2	0
Breivogle,lf	3	1	0	0	1	Markley,2b.	4	0	4	1	0
Curtis,2b..	4	2	0	2	0	Dixon,ss...	4	0	2	2	0
Mosher,1b.	3	0	10	2	0	Barney,c...	3	0	6	5	0
Rutherf'd,ss	4	1	2	1	0	Bell,1b.....	3	0	8	1	2
Lacey,3b...	3	1	0	0	0	Murpby,cf.	2	0	0	0	1
Ryan,rf....	3	1	0	0	0	VanZandt,lf	2	0	3	1	0
Meegan,c..	3	0	14	2	0	Toons,rf....	2	0	1	0	1
Kellogg,p..	2	0	0	5	0	Barnes,p...	2	0	0	3	0
Totals...	29	7	27	12	1	Totals...	26	0	27	15	4

Com.-Subsistence...	0	1	0	0	0	1	0	0	0	—2
Empire............	0	0	0	0	0	0	0	0	0	—0

Runs—C.-S.: Buchanan, Rutherford. Earned runs—C.-S., 2. Left on bases—C.-S., 3; Empire, 3. First base on balls—Off Barnes, 1; off Kellogg, 3. Two base hits—Buchanan, Rutherford. Struck out—By Kellogg, 15; by Barnes, 6. Double plays—VanZandt to Markley to Bell; Meegan to Rutherford. Hit by pitcher—By Barnes 1 (Kellogg). Umpire—Irwin. Time of game—2.00. Scorer—Moeller.

RESULTS OF GAMES, MARCH 19.

At Empire—Commissary-Subsistence, 2; Empire, 0.
At Colon—Ancon, 2; Atlantics, 8

STANDING OF CLUBS.

	P.	W.	L.	P.C.		P.	W.	L.	P.C.
Com-Sub.	4	4	0	1.000	Empire ..	4	1	3	250
Atlantics..	4	2	2	.500	Ancon ...	4	1	3	.250

SCHEDULE OF GAMES, MARCH 26,

At Ancon—Commissary-Subsistence vs. Ancon.
At Empire—Atlantics vs. Empire.

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission and Panama Railroad Company arrived at the ports of Cristobal and Colon during the week ending March 18, 1911:

San Mateo, March 12, from Philadelphia, with 1,000 drums gasoline for stock.

Prinz Eitel Friedrich, March 12, from New York, with 25 cases enamel paint for stock.

Consul Horn, March 12, from Gulfport, with 709 pieces piling, 744 pieces washers, 6 barrels washers for Atlantic Division; 11 barrels washers for stock.

Colon, March 13, from New York, with 13 cases rubber hose for Atlantic Division; 60 kegs potassium chlorate, 22 kegs manganese dioxid for Mechanical Division; 20 kegs shellac for Panama railroad; 54 cases drugs and sundries for Sanitary Department; 50 bundles steel rail, 88 cases caustic soda, 34 barrels resin, 11 barrels water bottles, 8 cases vermillion paint, 9 cases drill machinery for stock; and a miscellaneous cargo, the whole consisting of 532 packages, weighing 99 tons.

Cristobal, March 13, from New York, with 25,470 barrels cement, 40,000 bags cement for Atlantic Division; 59,040 bags cement for Pacific Division.

Atenas, March 16, from New Orleans, with 10 barrels journal bearings for Mechanical Division; 43,198 feet, B. M., yellow pine lumber for stock.

Almirante, March 17, from New York, with 3 cases machinery for Mechanical Division; 34 bundles brooms for stock.

The following vesels arrived at or departed from the port of Balboa during the week ending March 18, 1911:

Arrivals—March 12, *Vicksburg*, from Central American ports; March 13, *Ucayali*, from Callao; *Riverside* from San Francisco; March 14, *Aztec*, from San Francisco; *Sydney*, from San Francisco; March 16, *Quito*, from Buenaventura; *Aysen*, from Valparaiso; *Arica*, from Guayaquil.

Departures—March 11, *Pennsylvania*, to San Francisco; March 10, *San Jose*, to San Francisco; March 14, *Barracouta*, to Central American ports; March 17, *Pleiodes*, to San Francisco; *Ecuador*, to Guayaquil; March, 18, *Fenwick*, to San Francisco; March 13, *Peru* (P.S.N.), to Valparaiso.

A concrete sea wall is in progress of construction on Colon beach from 11th street to the wharves in front of the railroad station. It will protect the beach from wave action and also afford a landing place for boats in the coastwise trade.

Proposals for Charcoal.

Sealed bids will be received at the office of the Depot Quartermaster, Mount Hope, until 2 p. m., March 31, 1911, when they will be publicly opened, for 40,000 pounds of charcoal in hags. Delivery of 10,000 pounds to be made within 10 days after award, balance within 30 days thereafter. Charcoal will be accepted on board cars at any point on the Panama railroad and will be inspected and weighed on receipt at destination. Payment will be made on basis of net dry weight, according to specifications which will be furnished upon application. Tne right is reserved to reject any or all bids. Bids must be marked "Proposal for Charcoal" and addressed to the Depot Quartermaster, Mount Hope, C. Z.

C. NIXON,
Depot Quartermaster.

PANAMA RAILROAD COMPANY.

PASSENGER TRAIN TIME TABLE No. 8—IN EFFECT MARCH 25, 1911.

SOUTHWARD.												NORTHWARD.											
SUNDAY ONLY.					DAILY EXCEPT SUNDAY.			SATURDAY ONLY.		Miles from Colon.	STATIONS.	DAILY EXCEPT SUNDAY.				SUNDAY ONLY.						SAT. ONLY	SUN. ONLY
29	27	25	23	21	7	5	3	71	73			2	4	6	8	20	22	24	26	28	30	72	74
P. M.	P. M	P. M	A. M.	A. M.	P. M.	A. M.	A. M.	P. M.	P.M.		Leave. Arr.	A. M.	P. M.	P. M.	P. M.	A. M.	P. M.	P. M.	P. M.	P. M.	P. M.	P. M	A. M.
7.00	4.00	1.00	10.00	6.45	4.35	10.30	5.25	6 00	10.45	0.00	†Colon..........	8.35	12.50	3.35	7.35	8.45	12.00	3.00	6.00	9.00	11.40	9.45	2.15
s 7.05	s 4.05	s 1.05	s 10.05	s 6.50	4.39	10.34	s 5.30	s 6.05	s 10.50	1.77	†Mt Hope C..	s 8.30	12.47	3.30	7.30	s 8.41	s 11.56	s 2.56	s 5.56	s 8.56	s 11.37	s 9 37	s 2.03
f 7.10	4.10	1.10	f 10 10	6.55	4.45	10.40	s 5.36	6.14	10.54	4.37	†Mindi ..	s 8.24	12.42	3.24	7.24	f 8.35	11.5	2 50	5.50	8.50	f 11.31	9 3	2.02
f 7.15			f 10 15				s 5.41	f 6.16	f 10.56	5 94	New Gatun..	s 8.19				s 8.30					f 11.26	f 9. 7	
s 7.18	s 4.18	s 1.18	s 10.18	s 7.01	s 4.51	s 10.46	s 5.44	s 6.18	s 10.58	6.79	†Gatun.........	s 8.17	s 12.38	s 3.19	s 7.17	s 8.27	s 11.44	s 2.44	s 5.41	s 8.44	s 11.24	s 9 25	s 1.56
s 7.36	f 4.36	f 1.36	f 10.36	f 7.19	s 5.11	s 11.07	6.03	f 6 38	f 11 20	15.26	†Bohio	s 7 58	f 12.16	f 2.59	s 6.56	s 8.08	s 11.25	s 2.25	s 5.25	s 8.25	f 11.05	f 9.01	f 1.32
s 7 42	s 4.42	s 1.42	s 10.42	f 7.25	s 5.17	f 11.13	6.09	f 6.45	f 11 26	18 51	Frijoles..	s 7.52	s 12.10	f 2.53	s 6.50	s 8.02	s 11.19	s 2 19	s 5.19	s 8.19	s 10.59	f 8.53	f 1.24
s 7.48	s 4.48	s 1.48	s 10.48	s 7.31	s 5 23	s 11.19	6.15	s 6.52	s 11.35	21.37	†Tabernilla ...	s 7.46	s 12.04	s 2.47	s 6.44	s 7 56	s 11.13	s 2.13	s 5.13	s 8.13	s 10.53	s 8.48	s 1.19
					5.24	11.20	6 16				†Tabernilla C.	7.45	12.02	2.46	6.43								
								6 56	11.38	21.61			P. M.									8.42	1.13
					5.26	11.22	6 18	s 6 58	s 11 42	22 87	†Barbacoas C.	7.43	12.00	2.44	6.41							s 8 40	s 1.11
s 7.53	s 4.53	s 1.53	s 10 53	s 7.36	s 5.27	s 11.23	s 6.19	f 7.04	s 11.47	23 30	†San Pablo....	s 7.42	s 11.59	s 2.43	s 6.40	s 7.51	s 11.08	s 2.08	s 5.08	s 8.08	s 10.48	s 8.33	f 1.04
f 7.59	f 4.59	f 1.59	f 10.59	f 7.42	f 5.33	f 11.29	f 6.25	s 7.12	s 11.54	25 74	†Mamei	f 7.36	f 11.53	f 2.37	f 6.34	f 7.46	f 11.02	f 2.02	f 5.02	f 8.0	f 10.42	s 8 27	s 12.58
s 8.04	s 5.04	s 2.04	s 11.04	s 7.48	s 5.40	s 11.36	s 6 32	s 7.16	s 12.00	28.27	†Gorgona	s 7.29	s 11.46	s 2.30	s 6.28	s 7.41	s 10.57	s 1.57	s 4 57	s 7.57	s 10.37	s 8 22	s 12 53
s 8.09	s 5.09	s 2.09	s 11.09	s 7.53	s 5 45	s 11.41	s 6 37		A. M.	29 68	†Matachin	s 7.24	s 11.41	s 2.25	s 6.23	s 7 36	s 10.52	s 1.52	s 4.52	s 7.52	s 10.32	s 8.18	s 12.49
s 8.14	s 5.14	s 2.14	s 11.14	s 7.58	s 5.49	s 11.45	s 6.42	s 7 20	s 12.05	31 01	†Bas Obispo...	s 7.20	s 11 37	s 2.21	s 6.19	s 7.31	s 10.47	s 1.47	s 4 47	s 7.47	f 10.27	8.14	12.45
s 8.20	s 5.20	s 2.20	s 11.20	s 8.04	s 5.55	s 11.51	s 6.49	s 7.25	s 12 12	32.62	Las Cascadas.	s 7.14	s 11.30	s 2.15	s 6.13	s 7.26	s 10.42	s 1.42	s 4.42	s 7.42	s 10.22	s 8.12	s 12.43
s 8.25	s 5.25	s 2.25	s 11.25	s 8.09	s 6.00	s 11.56	s 6.54	s 7.32	s 12.17	34.91	†Empire.......	s 7.09	s 11.25	s 2.10	s 6.08	s 7.21	s 10.37	s 1.37	s 4.37	s 7.37	s 10.17	s 8.07	s 12.38
						P. M.																	
s 8.30	s 5.30	s 2.30	s 11 30	s 8.14	s 6.05	s 12.01	s 6.59	s 7.37	s 12.22	35.90	†Culebra	s 7.04	s 11.20	s 2.04	s 6.03	s 7 16	s 10.32	s 1.32	s 4.32	s 7.32	s 10.12	s 8.02	s 12.33
8.32	5.32	2.32	11.32	8.16	6.08	12.03	7.01	7.40	12.24	36.52	†Summit C....	7.01	11.17	2.00	6 00	7 13	10 30	1.30	4.30	7.30	10.10	8 00	12.31
f 8.39	f 5.39	f 2.39	f 11.39	f 8.23	6.16	12 11	7 09	s 7.47	s 12.31	39.77	†Paraiso Jct...	6.52	11.09	1.52	5.52	f 7.05	f 10.22	f 1.22	f 4.22	f 7.22	f 10.02	f 7.52	f 12.23
s 8.41	s 5.41	s 2.41	s 11.41	s 8.25	s 6.18	s 12.13	s 7.11	s 7.50	s 12.35	40.15	†Pedro Miguel	s 6.50	s 11.05	s 1.50	s 5.50	s 7.03	s 10.19	s 1.19	s 4.19	s 7.19	s 9.59	s 7.50	s 12.21
s 8.46	s 5.46	s 2.46	s 11.46	s 8.30	s 6.24	s 12.19	s 7.16	s 7.56	s 12.40	41 66	Miraflores....	s 6.45	s 11.00	s 1.45	s 5 45	s 6.58	s 10.14	s 1.14	s 4.14	s 7.14	f 9.54	s 7.45	s 12.16
8.52	5 52	2.52	11.52	8.36	6.30	12.25	7.21	8 02	12 45	43.86	†Corozal Jct...	6 39	10 54	1 39	5.39	6.53	10.09	1.09	4.09	7.09	9.49	7.40	12.11
s 8.53	s 5.53	s 2.53	s 11.53	s 8.37	s 6.31	s 12.26	s 7.22	s 8.03	s 12.50	44.16	†Corozal.	s 6.38	s 10.53	s 1.38	s 5.38	s 6.52	s 10.07	s 1 07	s 4.07	s 7.07	s 9.47	s 7.38	s 12 09
f 8.55	f 5 55	f 2 55	f 11 55	f 8 39	f 6.33	f 12.28	f 7.24	f 8.05	f 12.52	44.84	Camp Diablo.	s 6.35	f 10 50	f 1 35	f 5.35	f 6.42	f 10.04	f 1.04	f 4.04	f 7.04	f 9.44	f 7.34	f 12.05
9.00	6.00	3.00	12.00	8.45	6.40	12.35	7.30	8.15	1 00	47.07	†Panama ..	6 30	10.45	1.30	5.30	6.45	10.00	1.00	4.00	7.00	9 40	7.30	12 01
P. M.	P. M.	P. M.	P. M.	A. M.	P. M.	P. M.	A. M.	P. M.	A. M.		Arr. Leave.	A. M.	A. M.	P. M	P. M.	A. M.	A. M.	P. M.	P. M.	P. M.	P. M.	P. M.	A. M.
29	27	25	23	21	7	5	3	71	73		†Tel. station. fFl'g sta. s stop	2	4	6	8	20	22	24	26	28	30	72	74

GATUN SHUTTLE TRAIN.

DAILY EXCEPT SUNDAY.				STATIONS.		DAILY EXCEPT SUNDAY.			
37	35	*33	31			32	34	36	38
P. M.	P. M.	P. M.	A. M.	Leave.	Arrive.	A. M.	P. M.	P. M.	P. M.
5.30	4.00	12.20	10.00	Colon		11.25	3.20	5.20	6.50
s 5.35	s 4.05	s 12.25	s 10 05	Mount Hope Cabin		s 11.20	s 3.15	s 5,15	s 6.45
s 5.40	s 4.10	s 12.30	s 10.10	Mindi		s 11.15	s 3.10	s 5.10	s 6.40
s 5.45	s 4.15	s 12.35	s 10.15	New Gatun		s 11.10	s 3.05	s 5.05	s 6.35
5.48	4.18	12.38	10.18	Gatun		11.07	3.02	5.02	6.32

* No. 36 will take siding at Gatun.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

The 200, or over, bigpin bowling scores for the week ending March 19 are as follows: Mengel, 220; Huttlemaier, 244, 211.

The 100, or over, duckpin scores for the week ending March 19 are as follows: Fredericks, 111; Huttlemaier, 106, 105; Hill, 103.

There will be an informal social on Friday evening, March 24. The program will be musical and literary in character.

On Sunday night, March 26, the Empire Musical Society will present "Gual's Holy City" under the direction of A. B. Dickson in the auditorium of the clubhouse. The Christian League of Culebra will unite with the association in this service. The sacred concert will begin at 8 o'clock and everyone in the community is invited to attend. Admission will be free and no collection will be taken.

The topic to be discussed at the session of the Discussion Club on Monday evening, March 27, will be "Sex and religion," the relation of the physical and spiritual natures; leader, H. N. Sollenberger.

EMPIRE.

There will be a billiard and pool tournament between Empire and Gatun on Saturday night, March 25.

The boy scouts will combine with the Gorgona boy scouts for an outing on Saturday afternoon, March 25.

The indoor baseball team will play the Gorgona team at Gorgona on Saturday night, March 25.

The Cristobal vaudeville company will give an entertainment in the clubhouse on Monday night, March 27.

GORGONA.

The Gorgona Dramatic Club, playing the comedy "Esmeralda" has just finished the last of eight engagements. It has appeared at all the clubhouses and at the National Theatre, Panama, entertaining about 2,500 people. C. W. Fahr is manager and E. L. Emery stage director. L. P. Robitoy, W. H. Robertson, and D. J. Kenny have assisted the management in handling the property. W. Humphrey is electrician. The club will present another play in the near future.

The Caveny entertainment company will give a return engagement on Tuesday evening, March 28, with a complete change of program.

GATUN.

The Gatun carnival was held at the clubhouse on Wednesday, Thursday and Friday of last week. Wednesday night was called "Gatun" night when 500 people from Gatun were present; Thursday night a special train brought 200 people from Cristobal, and another special train on Friday night brought 450 people from other towns on the Isthmus. There were illuminated street parades on all three nights. The entire second floor of the clubhouse was turned over for the use of the carnival. Among the attractions were the following: Punch and Judy show, nigger baby shooting gallery, infernal regions, trip around the world, menagerie of wonderful animals, milky way telescope, freak hall, moving pictures, wrestling match, fortune telling booth, country dance, candy booth, pennant and banner booth, vaudeville, fourth degree of Kangaroos, K. of P. picture gallery, ice cream, etc. Seven hundred and seventy-five dollars were taken in, about 50 per cent of which will be net proceeds.

On March 26, Mr. Chenneville will give a five-minute talk on the "Theatre," and Mr. Barte will speak on the "City."

The Caveny entertainment company will give a return engagement on Monday, March 27.

The Cristobal vaudeville company will appear at Gatun on April 3.

The Yost entertainment company will appear at the clubhouse on April 10 and 24.

CRISTOBAL.

Cristobal won two out of three bowling games from Gatun on Saturday night with the following scores:

Cristobal.				Gatun.			
Weston	81	95	74	Adams	75	77	75
Jacques	72	84	82	Smith		74	88
Rosteck	97	75	84	Dalton	87	90	102
Howard	85	95	96	Blackburn		78	77
Claherty	99	80	81	Barte	99	92	86
				Beck	81		
				Wolf	79		
Total	434	429	417	Total	421	411	428

The Cristobal vaudeville company has elected the following officers: President, W. G. Manley; treasuer, Irvin Delong, and manager, F. G. Pack. The following engagements have been made for the company: Tuesday, March 21, Gorgona; Monday, March 27, Empire; Monday, April 3, Gatun; and Friday, April 7, National Theatre, Panama.

PORTO BELLO.

The chess club meets every Thursday evening. Several new members have been added.

The Gorgona Dramatic Club playted "Esmeralda" on Saturday night to a well-pleased audience.

A 20-foot diving tower has been erected near the spring board at the swimming hole.

February Rainfall for Three Years.

Station.	1909	1910	1911	Station Average	Years of Record	Rai'y days 1910
Pacific Section–	*Ins.*	*Ins.*	*Ins.*	*Ins.*		
Ancon	2.90	.43	2.75	.91	13	9
Balboa	1.69	.46	3.22	.60	12	7
Miraflores	1.81	2.02	2.43	2.09	3	6
Pedro Miguel	3.26	.50	1.40	1.29	4	6
Rio Grande	2.88	1.00	.91	.72	7	9
Central Section–						
Culebra	2.46	.93	.74	.57	21	7
Camacho	2.16	1.39	.69	.85	5	8
Empire	1.50	.75	.55	.58	6	10
Gamboa	4.07	1.80	.71	.84	26	11
Alhajuela	3.71	2.58	2.29	.83	12	7
El Vigia	4.88	2.41	3.19	3.49	3	9
Gorgona	......	1.79	1.99	.93	7	9
San Pablo	1.76	2.87	1.12	1.46	4	11
Tabernilla	2.87	2.19	.99	1.60	4	14
Bohio	3.74	6.89	1.87	2.11	16	19
Trinidad	4.27	5.97	2.00	3.28	4	19
Monte Lirio	5.69	8.93	2.41	4.60	4	20
Atlantic Section–						
Gatun	4.12	3.33	2.19	2.41	7	22
Brazos Brook	4 13	3.30	2.03	2.31	5	18
Cristobal	1.92	3.58	1.81	1.46	41	18
Porto Bello	6.82	5.89	6.90	5.28	4	25
Nombre de D	8.64	4.40	3.28	5.44	3	25

Rainfall from March 1 to 18, Inclusive.

Stations.	Maximum in one day	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	.25	15	.25
Balboa	0	....	0
*Miraflores	0	....	0
Pedro Miguel	0	....	0
Rio Grande	0	....	0
Central Section—			
Culebra	0	....	0
*Camacho	.02	2	.02
Empire	0	....	0
Gamboa	.18	2	.18
*Juan Mina	.10	14	.10
Alhajuela	.01	1	.01
*El Vigia	0	....	0
*Gorgona	0	....	0
San Pablo	.06	‡	.13
Tabernilla	.14	14	.17
Bohio	.29	2	.36
*Monte Lirio	.20	6	.64
Atlantic Section—			
Gatun	.61	2	1.10
*Brazos Brook	.24	6	.53
Cristobal	.16	2	.49
Porto Bello	.39	2	*1.71

*Standard rain gage—readings at 5. p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

†To 5 p. m., March 17.

‡14th and 15th.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saurday, March 18, 1911. All heights are in feet above mean sea level.

Date and Date	Station.				
	Vigia.	Alhajuala	Gamboa.	Bohio.	Gatun Lake.
Sun. March 12	125.8	92.3	44.9	12.8	12.8
Mon. March 13	125.7	92.2	44.9	12.7	12.7
Tues. March 14	125.8	92.2	44.8	12.6	12.6
Wed. March 15	125.8	92.2	44.8	12.6	12.6
Thurs. March 16	125.7	92.2	44.8	12.6	12.6
Fri. March 17	125.7	92.1	44.8	12.5	12.5
Sat. March 18	125.7	92.2	44.8	12.5	12.5
Height of low water	125.0	92.0	45.0		

LOST—At Pier No. 11, Cristobal, on Wednesday, March 1, six 4 by 5 auto-graflex plate holders, wrapped in brown paper, with the name "Pring" on the outside. Return to either the Cristobal or Gorgona Y. M. C. A.

A concert will be given by the Isthmian Canal Commission Band at Empire, C. Z., on Sunday, March 26, 1911, at 6 p m.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Allianca	P. R. R.	Friday	Mar. 24
Colon	P. R. R.	Friday	Mar. 31
Advance	P. R. R.	Thursday	April 6
Panama	P. R. R.	Wednesday	April 12
Cristobal	P. R. R.	Tuesday	April 18
Ancon	P. R. R.	Monday	April 24
Allianca	P. R. R.	Saturday	April 29
Colon	P. R. R.	Saturday	May 6
Advance	P. R. R.	Friday	May 12
Panama	P. R. R.	Thursday	May 18
Allianca	P. R. R.	Wednesday	May 24
Colon	P. R. R.	Wednesday	May 31
Advance	P. R. R.	Tuesday	June 6
Panama	P. R. R.	Monday	June 12
Allianca	P. R. R.	Saturday	June 17
Colon	P. R. R.	Saturday	June 24
Advance	P. R R.	Friday	June 30

CRISTOBAL TO NEW YORK.

Advance	P. R. R.	Saturday	Mar. 25
Panama	P. R. R.	Friday	Mar. 31
Allianca	P. R. R.	Thursday	April 6
Colon	P. R. R.	Wednesday	April 12
Advance	P. R. R.	Tuesday	April 18
Panama	P. R R.	Tuesday	April 25
Cristobal	P. R. R.	Tuesday	May 2
Ancon	P. R. R.	Monday	May 8
Allianca	P. R. R.	Friday	May 12
Colon	P. R. R.	Thursday	May 18
Advance	P. R. R.	Wednesday	May 24
Panama	P. R. R.	Wednesday	May 31
Allianca	P. R. R.	Tuesday	June 6
Colon	P. R. R.	Tuesday	June 13
Advance	P. R. R.	Sunday	June 18
Panama	P. R. R.	Saturday	June 24
Allianca	P. R. R.	Friday	June 30
Colon	P. R. R.	Thursday	July 6
Advance	P. R. R.	Wednesday	July 12

NEW YORK TO COLON.

Trent	R. M.	Saturday	Mar. 18
Metapan	U. F. C.	Thursday	Mar. 23
Prinz Joachim	H.-A.	Saturday	Mar. 25
Oruba	R. M.	Saturday	April 1
Magdalena	R. M.	Saturday	April 15

COLON TO NEW YORK.

Almirante	U. F. C.	Thursday	Mar. 23
Prinz Aug. Wilhelm	H.-A.	Tuesday	Mar. 28
Santa Marta	U. F. C.	Thursday	Mar. 30
Magdalena	R. M.	Tuesday	April 4

NEW ORLEANS TO COLON.

Turrialba	U. F. C.	Saturday	Mar. 18
Parismina	U. F. C.	Wednesday	Mar. 22
Abangarez	U. F. C.	Saturday	Mar. 25

COLON TO NEW ORLEANS.

Atenas	U. F. C.	Thursday	Mar. 23
Cartago	U. F. C.	Thursday	Mar. 23
Turrialba	U. F. C.	Thursday	Mar. 30
Parismina	U. F. C.	Thursday	Mar. 30

COLON TO BARBADOS, CALLING AT TRINIDAD.

Trent	R. M.	Tuesday	Mar. 28
Oruba	R. M.	Tuesday	April 11
Magdalena	R. M.	Tuesday	April 25

Hamburg-American steamers leave for New York every Tuesday at 10 a. m.; for Jamaica every fortnight, connecting there with steamers for all points in Cuba; for Port Limon every Tuesday, direct, or by way of Bocas del Toro.

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursday at 3 p. m.; for New Orleans via Port Limon and Puerto Barrios on Thursday at 4 p .m., and for New York on Thursday at 11 a. m.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending March 29, 1911, (75th meridian time):

Date.	High.	Low.	High.	Low.	High.
	A. M.	A. M.	A. M.	P. M.	P. M.
March 23	......	3.20	9.15	3.45	9.30
March 24	......	4.20	10.20	5.00	10.40
March 25	......	5.32	11.45	6.15	......
			P. M.		
March 26	12.10	6.42	12.55	7.15	......
March 27	1.17	7.38	1.50	8.05	......
March 28	2.10	8.25	2.33	8.50	......
March 29	2.53	9.08	3.10	9.30	......

CANAL RECORD

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The Canal Record

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Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Gatun Locks.

The construction of the operating tunnel in the center wall of the locks at Gatun has been begun in the upper locks.

The steamshovel working in the soft mud of the slide in the lower locks excavated 2,367 cubic yards on March 27.

Concrete Dock at Pacific Entrance.

Work has been begun on the reinforced concrete dock, which is to be the first constructed of the series of docks proposed for the anchorage basin at Balboa, near the Pacific entrance to the Canal. The dock will be based on 55 concrete piers nine feet in diameter which will rest on rock. Excavation for four of these piers has been begun, the lowest point reached so far being 25 feet below mean tide, while the average depth to rock is minus 65 feet. The excavation is in soft mud composed of decaying vegetable matter and fish of low order. Caissons of concrete formed around collapsible steel forms are used. A gas resulting from the decaying matter overcame one of the workmen in a caisson on March 25, and precautions are now being taken to supply fresh air to the men in the pits.

Borings are being made immediately north and east of the site of the new dock, to determine the character of foundation that will be met in the construction of another dock.

Sale and Delivery of Fuel Oil.

The agreement between the Isthmian Canal Commission and the Union Oil Company of California for the sale and delivery of fuel oil, made on April 1, 1909, has been amended as follows:

First. That the standard of quality of fuel oil to be furnished by the party of the second part shall not be heavier than 14 degrees nor lighter than 26 degrees Baumé at 60 degrees Fahrenheit, and shall be equal in efficiency, under the same conditions, to the oil furnished heretofore by the party of the second part to the party of the first part, for consumption on the Canal Zone.

Second. If said fuel oil shall contain water and sand in excess of two per cent then said party of the first part shall be entitled to a rebate on such excess at the agreed price of one dollar and ten cents per barrel, provided claim therefor is made within 15 days after delivery thereof, and provided further, that the final test of the water content of the oil shall be based upon distillation. The party of the second part further agrees to furnish not to exceed one hundred thousand barrels of fuel oil monthly, if required, at the agreed price of $1.10 per barrel; and it is mutually agreed that the basis of measurement for payment shall be a barrel of 42 gallons, U. S. standard, at 60 degrees Fahrenheit.

Third. The seventh paragraph of said agreement of April 1, 1909, shall not be construed to require the payment by the party of the second part during the existence of this contract of the monthly license fee of $500 therein referred to for the sale by the party of the second part to others than the Isthmian Canal Commission and the Panama Railroad Company of oil at the end of its pipe line at Balboa, C. Z., from its storage tanks, provided that sales to such others shall not at any time deprive the said Commission and railroad company of the amount needed to supply their requirements under this agreement.

Fourth. The supplementary agreement between the parties hereto made on April 1, 1909, is hereby cancelled and held to be of no further effect, and the provisions of the original agreement of April 1, 1909, between the parties hereto which are in conflict or inconsistent with the terms of this supplementary agreement are hereby substituted and superseded; otherwise this agreement shall be held to form a part of the said original agreement of April 1, 1909.

A revocable license was granted on January 10,1906, under which the Union Oil Company was to deliver oil at 90 cents a barrel at any point along the Canal, pay a fee of $500 a month to the Canal Zone treasury for the support of schools, and the regular taxes. Under this license an 8-inch pipe was laid across the Isthmus, a distance of 48 miles and oil was delivered in August, 1907, although delivery along the entire length of the line was not made until November 14, 1907.

The oil company found that it was actually costing $1.10 a barrel to deliver oil on the Isthmus, and after an effort had been made to procure oil at a less price, the Commission entered into a contract for one year, extendible for three years, on April 1, 1909, providing for the remission of the monthly payment of $500, so long as oil was sold only to the Commission or Panama Railroad Company, and for a price of $1.10 a barrel for not less than 30,000 nor more than 60,000 barrels of oil a month. This agreement was made because oil at $1.10 a barrel is more economical than coal, and because it was desired to make a thorough test of oil fuel as compared with coal. The contract provided a standard for the oil, for the operation of the pipe line in case the oil company should refuse to operate it, and secured the Commission against loss from failure of the company to carry out its contract. On October 11, 1910, permission was granted the company to sell oil at Balboa to others than the Commission and Panama Railroad Company. In July, 1910, the monthly consumption of oil was 56,149 barrels, and steps were at once taken to increase the maximum amount that could be used. The new contract increases the amount of oil that may be used monthly to 100,000, and provides the distillation test to determine the water content.

The annual consumption of oil and the monthly average, have been as follows:

	Annual barrels.	Monthly average, barrels.
1907*	6,919	1,384
1908	154,817	12,901
1909	534,958	44,580
1910	652,022	54,335
1911—		
January	....	62,637
February	....	72,939

*Five months.

Gatun Dam Spillway.

The concrete work in the spillway of Gatun Dam is over 51 per cent completed, 128,314 cubic yards out of a total of 250,000 having been placed up to the close of work on March 25. A statement of the amount laid each day last week and of the total in place, follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
	Cu. Yds.		
March 20	332	17:00	2
March 21	324	17:00	2
March 22	412	17:00	2
March 23	364	17:00	2
March 24	336	17:00	2
March 25	268	17:00	2
Total	2.036	102:00	2
Previously reported	126.278		
Grand total	128,314		

Meals for Negro Laborers.

Reductions in the prices of foodstuffs and economies in the methods of preparing and serving meals to negro laborers have made it possible to reduce the price per ration of three meals from 30 to 27 cents, until further notice, as indicated in an official circular published elsewhere in this issue. The number of rations served and the cost of food and service during the past four months, are as follows:

Month.	Number rations served.	Cost Cents.
November	39,071	26.55
December	38,201	27.03
January	37,010	26 04
February	31,260	25.64

Meals for negro and European laborers have been served in the past at separate places, necessitating separate kitchens for the cooking. Except at Gatun and Ancon the food is now prepared in one kitchen and served on opposite sides, so that, although one kitchen organization does the cooking, the food is still served separately to the two classes of laborers. Under this system the cost of service has been steadily reduced, although the average daily number of rations served to negro laborers decreased from 5,900 in July, 1908, to 1,116 in February, 1911. Of the negro laborers as viewed from the stand-

NOTES OF PROGRESS.

(*Continued.*)

point of subsistence, the Subsistence Officer says:

"The negro is gradually changing his status from that of a laborer to that of an inhabitant, and instead of getting his meals from the Subsistence Department he now buys food at the Commissary or from the local markets. Apparently a great deal of yams, yuccas, and sweet potatoes consumed by the negroes are actually grown on the Isthmus, as our importations of yams and sweet potatoes at the present time are very light, the yams not over one-fourth of the quantity imported two years ago. The present laborers in the common labor kitchens are not "floaters," or people who work irregularly, or new arrivals on the Isthmus, but they are in fact old employes and men generally who work every day; generally speaking the most reliable and most industrious of the negro workmen."

Each ration consists of three meals so that the price of a meal served to a negro laborer is nine cents.

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the week ending March 25, follows:

DATE.	Hours worked.	Cubic Yards.
March 20	7:00	3,001
March 21	6:00	2,802
March 22	7:23	3,451
March 23	7:14	3,386
March 24	7:33	3,453
March 25	7:26	3,051
Total	42:36	19,144

Ancon Crusher.

A statement of the rock crushed at Ancon quarry during the week ending March 25, follows:

DATE.	Hours worked.	Cubic Yards.
March 20	9:50	3,364
March 21	10:10	3,609
March 22	8:55	3,175
March 23	7:55	2,470
March 24	7:40	1,571
March 25		*276
Total	44:50	14,465

*Crusher shut down, putting shaft in No. 12 crusher.

Models of Locks and Dam.

A model of the locks is being constructed at Gorgona shops, and a model of Gatun Dam is being made in the States, both for exhibition at the International Exposition to be held at Turin, Italy, during the present year.

Losses Caused by the Sinking of the Finance.

A compromise agreement has been reached between the proctors for the various interests in the ligitation arising out of the collision between the steamship *Finance* of the Panama railroad line and the steamship *Georgic* of the White Star Line on November 26, 1908, which resulted in the sinking of the former vessel and a total loss of the effects of the passengers, as well as a total loss of the cargo. The agreement provides for the payment of eighty (80) per cent of the amount of the proved claims of the shippers of cargo and seventy (70) per cent of the passengers' claims as filed by them without further proof. The settlement is in process of adjustment and by the end of March the entire funds should be paid over to the proctors for the claimants. Mr. Evan Shelby, of No. 60 Wall street, New York, who represents nearly all the passengers, has requested that the passengers send him their present addresses, and advice as to whether he shall send them a New York check in settlement of their claims.

The cost of repairs to steam shovels in the Central Division during January and February averaged two cents per cubic yard of material excavated.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Over 58 per cent of the concrete for the system of three twin locks at Gatun has been laid, the exact amount in place at the close of work on March 25, being 1,219,573 cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending March 25, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers.		
	Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
March 20	2,438	41:45	6	694	8:40	2	175¾	3,307¾
March 21	2,252	40:18	6	648	8:40	2	153¼	3,053¼
March 22	2,454	41:10	6	606	8:40	2	205¾	3,265¾
March 23	2,654	47:42	6	476	7:40	2	155¾	3,285¾
March 24	2,266	40:52	6	662	8:40	2	186½	3,114½
March 25	2,434	43:42	6	624	8:40	2	221	3,279
*Portable mixers				576½				576½
Total	14,498	255:39	6	4,286½	51:00	2	1,098	19,882½
Previously reported								1,199,691
Grand total								1,219,573½

*The 576½ yards shown for the portable mixers are reinforced concrete, and were placed on the following days: March 20th, 48 yards; March 21, 71½ yards; March 22, 105½ yards; March 23, 94 yards; March 24, 122½ yards; March 25th, 135 yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Migue' is over 70 per cent completed, 596,678 cubic yards, out of a total of 837,400, having been placed at the close of work on March 25. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-Cubic yard mixers			AUXILIARY PLANT.						Large stone.	Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete Placed.	Hours worked	No. of mixers		
	Cu. Yds.			Cu. Yds			Cu. Yds.			Cu. Yds.	Cu. Yds.
March 20	1,216	18:67	2	646	15:50	3	148	9:00	1		2,010
March 21.	1,184"	18:50	2	720	17:33	3	137	8:33	1		2,041
March 22	1,022	16:67	2	750	15:82	3	160	9:17	1		1,932
March 23.	1,048	18:00	2	613	15.00	3	79	5:00	1		1,740
March 24.	962	16:00	2	530	15.00	3	127	7:50	1	1	1,620
March 25.	1,056	16:00	2	686	16:00	3	140	7:50	1		1,882
Total	6,488	103:84	2	3,945	94:65	3	791	46:50	1	1	11,225
Previously reported										4,178	585,453
Grand total										4,179	596,678

MIRAFLORES LOCKS.

Over 12 per cent of the concrete for the system of locks at Miraflores was in place on March 25, the total amount on that date being 166,007 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	AUXILIARY PLANT.										Total.
	2-cubic yard mixers.			2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers.	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
March 20.				296	6:00	2	677	35:25	5	5	1,040
March 21.				304	6:00	2	821	45:00	6	5	1,211
March 22.	132	3:67	2	224	5:00	2	940	48:00	6	5	1,359
March 23.	336	8:67	2	216	5:00	2	849	46:50	6		1,478
March 24.	332	8:00	2	256	6:00	2	851	44:75	6		1,516
March 25.	240	8:50	2	280	6:00	2	609	25:50	5		1,212
							*438	35:00	1		
Total	1,040	28:84	1.33	1,576	34:00	2	5,185	280:00	5	15	7,816
Previously reported										3,675	158,191
Grand total										3,690	166,007

*This 438 yards was mixed by a ½-yard mixer, the amounts for each day being: March 20th, 62 yards; March 21st, 81 yards; March 22d, 58 yards; March 23rd, 77 yards; March 24th, 77 yards; March 25th, 83 yards.

THE COLON FIRE.

Extent of Loss, and Measures for Relief.

A fire, said to have originated in a frame building at the northwest corner of 13th and Cash streets in Colon shortly after 3 o clock on the afternoon of March 23, destroyed 10 city blocks and several buildings situated on the Mount Hope road. The remains of a child and a man have been recovered from the debris. No official estimate has yet been made of the loss in Colon.

Under the terms of an agreement with Panama, published elsewhere in this issue, the Cristobal fire department confined its work to the property of the Isthmian Canal Commission and the Panama railroad. Sailors from the U. S. S. *Paducah*, which was at anchor in the harbor, working under the direction of their officers, assisted the Colon firemen and volunteers in checking the fire by cutting down buildings in its path. The buildings in Colon are principally wooden frames and they burned very rapidly. The heat drove the firemen away from the nearest hydrants, and eight 2½ inch pipes were left open. Because of this the water pressure was low although 3,000 gallons a minute were being pumped into the 20 inch main from Mt. Hope to Colon all during the fire.

The following Isthmian Canal Commission buildings situated on the Mount Hope road were burned: Building No. 240, Salvation Army Headquarters; No. 217, school for colored children; Nos. 93, 94, 95, and 96, of Folks River labor camp; No. 118, public convenience house; No. 284, wash house. Houses No. 97 and 99 were pulled down in checking the fire. Houses in Cristobal, facing the boundary line, were blistered by the heat, but only slightly damaged. No insurance is carried on Commission property. The loss is estimated at $14,394.

Red Cross and Relief Work.

It is estimated that 2,000 people in Colon were without homes on the night of March 23. All who asked for food were given it at the Camp Bierd labor camp of the Commission at Cristobal. Beginning March 25, the subsistence was undertaken by the Canal Zone Branch of the American Red Cross, and this will be continued until the need has passed. A tent village was started by the Red Cross in an open field near the baseball park, where 35 tents were ready for use by the night of the 24th. Water mains were laid through the camp by noon of the 24th. There are now 66 tents in the village, capable of accomodating 800 people, and between 450 and 500 are being cared for. The Health Officer of Colon has charge of the sanitary arrangements, and a nurse from Colon Hospital cares for the sick.

The Cristobal Y. M. C. A. gave a benefit entertainment at the clubhouse on the night of March 24, in which the Caveney Company, the Cristobal Vaudeville Company, and others assisted. One hundred and seventy-five dollars was added to the relief fund. The Y. M. C. A. has also assisted by receiving and distributing clothing.

A baseball game between the second nine of the Commissary-Subsistence Department and Porto Bello was played at Colon on March 26 under the auspices of the Colon Humane Society, at which $167 was realized.

Benefit Baseball Game.

A baseball game for the benefit of the Colon fire sufferers between teams representing the Commissary-Subsistence Department and Empire will be played on the grounds of the Atlantic Athletic Association at Colon on Sunday, April 2, at 3 p. m. Both teams have volunteered their services and a close and exciting game is anticipated. Tickets at $1 each, including free transportation on special train leaving Panama at 12 o'clock and returning leaving Colon at 6.30 p. m., are on sale at the offices of the district quartermasters, at Y. M. C. A. clubhouses and at the offices of the Panama Banking Company, Panama and Colon. The receipts will be turned over to the Canal Zone Branch of the American National Red Cross Society, which is in charge of the relief work in Colon. Music will be furnished. Box seats, at $2 each are on sale at the office of the Subsistence Officer in Cristobal.

New Regulations for Canal Zone Fire Department

A new set of rules and regulations governing the Division of Fire Protection of the Canal Zone has been approved, and will become effective on April 1, 1911. The regulations regarding the use of apparatus in the cities of Panama and Colon are extensively defined in Articles 210 to 220, which read, as follows:

Article 210. In addition to property of any description whatsoever situated within the limits of the Canal Zone, all property of the Isthmian Canal Commission and Panama railroad, and other property owned or leased in the cities of Panama or Colon are included in the fire protection districts of the Ancon and Cristobal companies, respectively.

Article 211. The Ancon or Cristobal companies shall respond to all alarms received from alarm boxes of this division located in the cities of Panama or Colon, respectively.

Article 212. If the Ancon or Cristobal companies are definitely advised by telephone, or otherwise, of fire, or imminent danger of fire in property described in Article 210, they shall immediately proceed to the scene of the fire.

Article 213. The Ancon or Cristobal companies will not respond, except as provided in the two preceding paragraphs, unless requested to respond by the chief, or acting chief, of the Panama or Colon fire departments.

Article 214. Upon arrival at a fire, if it is found that the fire is in property described in Article 210, the Ancon or Cristobal companies will take charge of fighting the fire.

Article 215. If upon arrival, it is found that the property described in Article 210, might be endangered by fire in adjacent property, the Ancon or Cristobal companies shall remain at the fire and protect property described in said article, but shall not assist in fighting the fire if it does not endanger such property, unless requested to do so by the proper official.

Article 216. If the fire endangers property described in Article 210, the Ancon or Cristobal companies will protect such property, and take part in fighting the fire, if necessary.

Article 217. If upon arrival, it is found that property described in Article 210 is not in danger, the Ancon or Cristobal companies will immediately return to quarters, unless requested by the chief, or acting chief, of the Panama or Colon fire departments to remain and assist in fighting the fire.

Article 218. If the Ancon or Cristobal companies are requested by the chief of the Panama or Colon fire departments to assist in fighting fire in Panama or Colon, in property other than described in Article 210, these companies will go into these cities and assist under the direction of the chief of the Panama or Colon departments.

Article 219. If the Ancon or Cristobal companies arrive first at a fire described in Article 210, the Panama or Colon fire departments will not take part in fighting such fire, unless requested by the officer in charge of the Canal Zone companies.

Article 220. All three-way hydrants in the city of Colon installed by the Isthmian Canal Commission or the Panama railroad for the protection of property described in Article 210 shall be reserved for use of the fire engine of Cristobal company.

Organization for Advancement of Negroes.

The Intercolonial Club, an organization composed of American, West Indian, and African negro men, with headquarters in Colon, recently celebrated its first anniversary. The club was organized to meet the needs of the educated class of negroes on the Isthmus and in the Canal Zone. Its membership includes ministers, lawyers, doctors, dentists, merchants, and business men, residents of Panama, Culebra, Empire, Gorgona, Gatun, Colon, Bocas del Toro, and Kingston, Jamaica. The club rooms are situated on Bolivar street and consist of a library, billiard room, reception room, club bar, and a reading room, which is furnished with the leading newspapers of New York and London, the better class American and English magazines, and such publications as deal with the affairs of the negro race. The club interests itself in all matters pertaining to the welfare of the race. Another object of the organization is to bring about a better understanding between the American and British negroes, and the club works in cooperation with the Pan-African Club of London and the National Club of Kingston. There are two social functions in the year; a dance, which is held in May, and an annual reception in September. The management of the club is in the hands of the officers and an executive committee which meets twice a month. A general meeting is held once a week. A special feature is the literary evening once a month, when questions are brought before the club on all matters of interest.

President Declines Clemency.

A cable message from Washington under date of March 25, 1911, states: "President has declined application for clemency M. H. Lough."

Matthew H. Lough, locomotive engineer, was found guilty in the District Court at Cristobal of criminal negligence in having caused a wreck at Bohio on the night of August 15, 1910, in which Elias Tinsley, a conductor, was killed. On appeal, the Supreme Court confirmed the decision of the District Court on February 21. During the visit of President Taft to the Isthmus in November, 1910, fellow employes of Lough presented a petition asking him to grant a pardon. The President directed that the case be brought to his attention after the decision of the Supreme Court had been made, and this was done in a petition presented to the Chairman and forwarded by him to the President. Mr. Lough's sentence is for one year in Culebra penitentiary, where he is now confined.

The Elders' Tennis Tournament.

The tennis tournament for members of Zone tennis clubs who are over 40 years of age took place on the court of the Gatun Tennis Club on Sunday, March 26, with the following entries: Empire, Mr. E. J. Williams, Mr. W. W. Wood; Panama, Mr. Pezet, Mr. Fearon; Culebra, Dr. Crabtree; Colon, Mr. P. G. Hoyt; Gatun, Major Harding, Major Jervey, Mr. Ben Johnson. The scores were as follows:

Preliminaries—Wood defeated Johnson, 6-3, 6-3; Hoyt, defeated Fearon, by default; Pezet defeated Williams, 3-6, 6-3, 6-2; Harding defeated Crabtree, 8-10, 6-3, 6-2.

Second round—Hoyt defeated Wood, 6-3, 6-3; Jervey defeated Harding, 6-1, 6-3.

Semi-finals—Jervey defeated Pezet by default.

Finals—Jervey defeated Hoyt, 2-6, 6-3, 11-9.

SOCIAL LIFE OF THE ZONE.

Women's Clubs.

A meeting of the executive board and conference of presidents of the Canal Zone Federation of Women's Clubs will be held in the Commission clubhouse at Empire on Tuesday afternoon, April 4, at 3 o'clock. Mrs. R. W. Hart has been designated corresponding secretary of the Federation during the absence of Mrs. F. Mears, and all communications regarding the work of the organization should be addressed to her at Cristobal.

The Federation cook book has been placed on sale at the newstands in Colon and at the Hotel Tivoli in Ancon.

Church Notes.

A three weeks' mission is being held at St. Ferdinand's Church in Empire, by the Very Rev. Patrick MacHale, of Philadelphia, visitor of the Vincentian Fathers. The mission is divided into three classes: For West Indians, for French, and from March 29 to April 2, for white Americans, non-Roman Catholics being invited to attend. The meetings are held in the church every evening at 7.30 o'clock. St. Ferdinand's parish includes the village of Empire and the surrounding districts, with several bush settlements, in all about 2,000 members.

The Wesleyan Methodist Church on the Isthmus has been asked to take charge of the Methodist work at Bocas del Toro and the adjoining stations. The church building and other property at Bocas has been turned over to the representatives of the conference and as soon as the investigation of titles is completed the transfer will be effected. The Rev. M. B. King of Panama and The Rev. E. J. Cooke of Colon will take the duty at the new mission until a minister is appointed. The Wesleyan Methodist Church on the Isthmus is part of the West Indies branch, which is under the jurisdiction of the missionary committee of the English conference.

Mr. James Hayter, agent of the American Bible Society, with headquarters at Guatemala City, was a recent visitor to the Isthmus in the interests of the work of the society.

Tivoli Hotel and Tourist Trade.

Two buildings formerly used as servants' quarters and one family house situated in the rear of the Hotel Tivoli have been remodelled for the accommodation of guests. They are furnished and equipped uniformly with the rooms in the main building, and baths and toilets are provided. The annex gives additional accommodations for about 60 persons. The hotel servants will be quartered in two barracks which have been moved from the Spanish camp to a site back of and near the hotel.

Additional accommodations have been made necessary by the large increase in the number of visitors to the Isthmus during the dry season. Interest in Canal construction attracts tourists, and healthful conditions having been established on the Isthmus, a considerable number of persons come here to escape the rigors of the winter months. The Tivoli was completed in 1907 and accommodated about 115 guests. Since that time the interior of the building has been remodelled, so that 150 persons may be accommodated without inconvenience. The trade during the dry season runs from 120 to 170 guests, in the wet season the average falls below 100. In addition to this transient trade, the hotel provides for large tourist parties from the States which visit the Isthmus on an average of once in three weeks from December to April. These excursions carry from 250 to 450 passengers. The tourists usually cross the Isthmus in special trains, arriving in time for lunch at the hotel, and returning to Colon in time to sail on the evening of the same day. For tourist lunches, tables are set in the ball room, the tea room, on the south veranda and the billiard room. The regular staff of waiters is supplemented on these occasions by ships' stewards, one steward to eight persons being sent over to assist. The hotel kitchen has been recently improved and enlarged and there is dining room equipment sufficient to provide for 600 persons at a sitting.

PERSONAL.

Major-General George W. Davis, U. S. A., retired, who was a member of the first Isthmian Canal Commission, and first Governor of the Canal Zone, arrived on the Isthmus on the *Panama* on March 24 for a brief visit.

Funds for Gatun Playground.

As a result of the three nights' carnival held in Gatun on March 15, 16 and 17, $360.15 has been turned over to the finance committee of the Gatun playground association for the establishing of a public playground in the village.

Culebra Gun Club.

The Culebra Gun Club will hold a clay pigeon shoot at its clubhouse on Sunday morning, April 2. All employes of the Commission and Panama railroad on the gold roll are eligible and those who are desirous of becoming members should communicate with—

WM. E. TRAGSDORF,
Secretary and Treasurer.

CULEBRA, March 25, 1911.

Changes in Organization.

Mr. George H. Ruggles has been assigned to take charge of the construction of the new concrete docks at Cristobal. The position of Superintendent of Public Works, formerly occupied by Mr. Ruggles, has been filled by the appointment of Mr. Maurice E. Gilmore, formerly of the Panama railroad engineering corps.

Obituary.

J. R. Cleary, an employe of the Mechanical Division, residing at Tabernilla, was killed at the Gorgona shops on March 18 by a railroad train. He was born in Baltimore, Md., was 24 years of age, married, and had been on the Isthmus since October, 1910.

Charles Matthew Cuvillier, who was employed in the Pacific Division as a foreman and who had been on the Isthmus from October, 1904, to December, 1910, died at his home in Alexandria, Va., on March 16. He was 40 years of age and is survived by a widow.

The statement in last week's issue of THE CANAL RECORD that Paraiso Court No. 5, I. O. P. K., had passed resolutions of sympathy on the death of R. C. Smith was in error. The resolutions of sympathy were adopted for Mr. R. C. Smith on account of the death of his wife.

Spanish War Veterans.

Chagres Camp, No. 2, Spanish War Veterans, will meet in the lodge hall at Gorgona on Sunday, April 2, at 2.30 p. m. A full attendance is desired.

B. P. O. E.

There will be a meeting of Elks at the Imperial Hotel, Colon, on Sunday, April 2, at 10 a. m. All Elks in good standing are requested to attend.

School Holidays.

The public schools will be closed for the Easter holidays from April 8 to 17.

LOST—A bunch of keys. Finder please notify Col. C. A. Devol, Chief Quartermaster, Culebra, C. Z.

Proposals for Charcoal.

Sealed bids will be received at the office of the Depot Quartermaster, Mount Hope, until 2 p. m., March 31, 1911, when they will be publicly opened, for 40,000 pounds of charcoal in bags. Delivery of 10,000 pounds to be made within 10 days after award, balance within 30 days thereafter. Charcoal will be accepted on board cars at any point on the Panama railroad and will be inspected and weighed on receipt at destination. Payment will be made on basis of net dry weight, according to specifications which will be furnished upon application. The right is reserved to reject any or all bids. Bids must be marked "Proposal for Charcoal" and addressed to the Depot Quartermaster, Mount Hope, C. Z.

C. NIXON,
Depot Quartermaster.

LABOR FORCE AND QUARTERS IN FEBRUARY.

The total of the Canal and Panama railroad force at work on February 28 was 35,955, as compared with 37,271 in January, and 37,458 in February, 1910. Of the total for February, 1911, Canal employes numbered 28,755, and Panama railroad, 7,200. The force report for February, follows:

DEPARTMENT.	SILVER EMPLOYES.*														Total Gold.	Grand Total.
	Artisans.						European Laborers.		West Indian Laborers.							
	Monthly	44 cents.	32 cents.	25 cents.	20 cents.	16 cents.	20 cents.	16 cents.	20 cents.	16 cents.	13 cents.	10 cents.	7 cents.	Total Silver.		
Const'ct'n and Eng'r'ng	4,515	15	20	241	627	2,590	3,231	1,247	112	560	3,481	2,985	265	19,889	3,605	23,494
Civil Administration	236			2	4	17						3		262	338	600
Sanitation	682			3	3	3	1	1			4	304	9	1,010	373	1,383
Quartermaster's	990		3	99	146	76	69	20	18		9	729	10	2,169	234	2,403
Subsistence	669			1	1									671	57	728
Disbursements	7													7	27	34
Examinat'n of Accounts	5													5	108	113
Total	7,104	15	23	346	781	2,686	3,301	1,268	130	560	3,494	4,021	284	24,013	4,742	28,755

Panama railroad force, 3,832; Panama railroad relocation force, 2,408; Panama railroad commissary force, 960. Total, 7,200. I. C. C. force, 28,755. Grand total, 35,955.

*All wages specified are in gold.

On February 28 there were 9,688 occupants of quarters for "gold" employes, of whom 2,133 were women and 1,895 were children. The occupants of quarters for European laborers numbered 5,690, of whom 272 were women and 377 were children. The occupants of quarters for negro laborers numbered 8,886, of whom 1,160 were women, and 1,368 were children. The total number of occupants of Commission quarters was 24,264.

HEALTH OF COLON.

Systematic Education of People in the Crowded Sections.

A campaign against disease has been begun in Colon by various organizations in cooperation with the public health authorities. The work is among the people in the crowded section of the city, and is along the lines of education. Colon has a population estimated variously at from 10,000 to 15,000 and the health authorities estimate that about 90 per cent of this population is floating, and that more than one-half of the unstable portion is composed of West Indian negroes who come to the Isthmus in search of work on the Canal.

Most of the dwelling houses in the crowded section are large frame structures two or three stories high (a sanitary decree issued on April 23, 1907, prohibits the construction of "new frame buildings or the remodeling of old ones, which provide for more than two stories.") The smaller type of houses has an average of 38 rooms, the larger, 75 rooms. Each house has central fire-proof kitchens, the number being regulated by the sanitary decree which orders that "kitchen space shall be provided for in buildings at the rate of not less than sixteen (16) square feet of space for each living room contained in each story." Running water is installed, and there are sanitary toilets with open plumbing.

In regard to the living rooms, the law provides that "no building or buildings to be used as a dwelling shall have a living or bedroom smaller than 10 by 10 feet and each room shall have not less than one window three by five feet and one door two feet six inches by seven feet opening upon a street, yard, alley, or patio. The distance between the floor and ceiling shall not be less than 10 feet."

Owing to the limited number of these houses in proportion to the population, and the high rent charged, each room is usually occupied by a family consisting of two or three adults and several children, or by three, or more, adult persons. It has been demonstrated, however, that should the authorities insist upon limiting the number of persons occupying a room, many people would be turned into the streets.

The room occupied by a family is usually divided into sleeping and living portions by a curtain, and is overcrowded with furniture. Although the West Indian negoes are accustomed to living out of doors during the day, they adhere to the old superstition that sleeping in the night air produces fever. They close the solid wooden doors at night and exclude all the air they can by means of curtains. On the ground floor the condition is more favorable to this exclusion of air than on the upper stories which get a sea breeze constantly.

The initial step in the campaign against disease was taken by the institution of district nursing, as outlined in THE CANAL RECORD of February 8. The object was to discover the reasons for the high rate of infant mortality in the city and to begin an educational campaign. The work is experimental, and, as far as it concerns Colon Hospital, temporary, as nurses of the regular staff can be spared for outside duty only during the dry season when the wards are not full. Two nurses began the work on January 16, and in the three weeks that followed, 409 visits were made, and nine babies were sent to Colon Hospital. In all other cases, the mothers of new born infants were taught the simple principles of infant hygiene, and the daily visit of the nurse was sufficient. Except in emergency cases, the nurses give no medicine or other supplies.

Tuberculosis work has been begun at the initiation of the Cristobal Woman's Club, acting under the advice of the health authorities, and with the cooperation of the churches, church societies, and other organizations in Cristobal and Colon. The district nurses assist by paying special attention to the children in the families they visit, with a view to the discovery of cases in their incipiency. When such are found, the mothers are given careful instructions regarding care and treatment. As a measure preliminary to the general work, placards in Spanish and English, giving rules for the prevention of the spread of the disease and for self-treatment for those already affected, have been posted in the halls of every tenement house in the city.

A large number of lantern slides have been received, and will be used to illustrate lectures to be delivered in the public buildings in different parts of the city, and in Cristobal. Besides the pictures showing the nature and development of tuberculosis, there are 20 slides showing sanitary and insanitary house conditions, flies and fly breeding. The exhibit will be accompanied with lectures.

Hamburg-American Steamship Service.

The Hamburg-American line has instituted a first and second class weekly service between Colon and New York, by the steamers *Prinz August Wilhelm, Prinz Joachim, Prinz Eitel Friedrich,* and *Prinz Sigismund,* one leaving Colon at 10 o'clock each Tuesday morning. All of these ships call at Kingston on both north and southbound voyages, and the *Prinz Joachim* and *Prinz August Wilhelm* call also at Santiago, Cuba. The weekly sailings to Port Limon, Costa Rica, have been discontinued and fortnightly calls have been substituted, the steamers leaving Colon on alternate Wednesdays. These ships call also at Bocas del Toro.

Quarantine Regulations Modified.

On account of the recent removal of quarantine restrictions against passengers, who spend five days in San José, Costa Rica and embark immediately upon arrival at Port Limon, and, in order to minimize as much as possible the restrictions against tourist traffic, the following regulations have been made effective, as of January 24, 1911:

Passengers from noninfected ports for Colon, via Port Limon will be allowed to avail themselves of the privilege of going to San José under the following conditions:

1. The captain of the vessel will prepare a list of all such passengers disembarking at Port Limon for the purpose of proceeding to San José. The captain, or other officer of the ship, will furthermore be required to accompany such passengers to the train and see that they go aboard directly for San José, without spending two or three hours walking about the city of Port Limon.

2. Such passengers must procure from the American Consul in San José a certificate stating that they reported at his office on that date. This is required as evidence that they went to San José, and did not spend the time in the coast country.

3. Upon return from San José, passengers must proceed directly from the train to the steamer, and the captain of the vessel will be required to certify that this provision of the regulation, as well as that mentioned in section 1, has been complied with.

Upon arrival at Colon, the captain of the vessel will present to the quarantine officer a list showing the names of the passengers, who went to San José, as provided for by the regulation, and he will be required to certify on honor that the provisions mentioned herein have been fully observed.

New regulations were placed in effect on the same date, governing passengers from Puerto Barrios, Guatemala. These are, as follows:

1. For the present, passengers, who have completed five days from date of departure from Puerto Barrios, will be received at Colon without quarantine detention, except in cases of sickness, provided, however, that such passengers come from Guatemala City to Puerto Barrios by rail the same day of sailing, without stopping at points along the line. Such passengers must bring a certificate from the officer of the Public Health and Marine Hospital Service, detailed in Guatemala City, to the effect that they are from that city, and, during the close season of quarantine, when an officer of that Service is on duty at Puerto Barrios, these certificates must be viséd by him.

2. Passengers without such certification, and, who have not completed five days on the trip from Puerto Barrios to Colon, will be subject to quarantine detention.

Money Orders for Costa Rica.

A money order convention between the Canal Zone and Costa Rica was signed at Washington on March 2. Regulations for the issue of these orders are published, as an official circular, on another page of this issue.

Panama-Gorgona Highway Nearing Completion.

Grading on the section of the Canal Zone highway between Pedro Miguel and Corozal has been practically completed; most of it has been macadamized, and rolling is now well under way. The trestle fill, made by the Panama railroad over the valleys of the Camaron and Caimitillo Rivers, and the construction of the concrete bridge over the Cardenas River, near Corozal, were finished a few weeks ago, thereby furnishing a continuous roadway from Panama to Gorgona, with the exception of the concrete bridge, now building, which is to span the Mandingo River, near Bas Obispo. It is probable that wheeled vehicles will be able to make the trip from Panama to Gorgona by July 1.

The highway out of Panama branches off the Caledonia road about one-half mile from the railroad station, and continues east of the railway, in some places one-half mile or more, and in others approaching close to, or crossing, the railroad right of way. From Panama to Corozal the road is rather tortuous, but from Corozal to Pedro Miguel there are very few sharp curves, although it takes several wide swings. At Pedro Miguel the highway crosses to the west of the relocated line, which it parallels until near Paraiso Junction, where the railroad is recrossed. From this point it follows the east bank of the Canal to the Empire suspension bridge, which takes it to the west side of the Cut. Passing through the east part of Empire it crosses the railroad and goes through the old town toward Las Cascadas. From Empire to Gorgona the road remains on the west side of both the Panama railroad and the Canal. The total length of the highway is about 20 miles, or about one mile longer than the rail distance between Panama and Gorgona.

A committee to determine the method of handling and disposing of scrap material has been appointed, consisting of Lieut.-Cols. D. D. Gaillard and C. A. Devol, Mr. J. A. Smith, Major T. C. Dickson, and Mr. A. L. Robinson.

Missing Man.

Any one having information regarding the whereabouts of Frank Braun of Newark, N. J., who is supposed to have come to the Isthmus, is requested to communicate with the American Legation, Panama.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

The 200, or over, bigpin bowling scores for the week ending March 25, are as follows: Cushing, 235, 223; Case, 227; Mengel, 226; Conlon, 218, 204; Huttlemaier, 216.

The 100, or over, duckpin scores for the week ending March 25, are as follows: Hill, 116; Huttlemaier, 111; Cornthwaite, 104; Case, 101; Fox, 100.

The standing of the players in the handicap chess turnament for the week ending March 25, is as follows:

Name.	Won.	Lost.	Name.	Won.	Lost.
Bartlett.....	7	1	Stearns.....	3	4
Dubois.....	4	6	Warner....	4	5
Goodenow...	5½	7½	Wilson.....	5	1
Putnam.....	6	8	Strong.....	2½	4½

There will be a return engagement of the Caveny Entertainment Company on Thursday evening, March 30, beginning at 8.15 o'clock with an entire change of program. Members, free; nonmembers, 50 cents; children, 25 cents.

The last period of the topic club on Monday evening April 3, between 7.45 and 8.15 o'clock, will be under the, direction of Mr. J. F. Warner; topic, "The law of service, in relation to growth and happiness."

Selected films will be presented at the motion picture entertainment to be held on Thursday evening, April 6.

EMPIRE.

Gorgona defeated Empire in an indoor baseball game on Saturday evening, March 25, by a score of 15 to 12.

Empire won two out of three events in the pool and billiard tournament with Gatun on March 25. Hersh beat DePoorter, 125 to 92; Pearson beat Wilson, 125 to 109; and Smith lost to Townsley, 80 to 100. A return match will be played at Gatun on Saturday, April 1.

The Cristobal Vaudeville Company will combine with the Empire Musical and Dramatic Society in a joint performance at the National Theatre, Panama, for the benefit of the Red Cross on Friday evening, April 7.

Moving pictures will be exhibited on March 29 and April 5.

There are three events still to be run off in the group contests in the gymnasium: Horizontal bar, three standing broad jump, and seventeen potato race. These events will be run off on March 30, April 6 and 13.

GORGONA.

On Sunday, April 2, A. A. Simka will deliver an illustrated lecture on "Jerusalem." Mr. Simka was born and raised in Jerusalem. The meeting opens at 7 o'clock.

The bowling alleys are again open. They have been thoroughly planed and are in excellent condition.

The weekly moving picture show is scheduled for Friday, March 31, instead of the regular Tuesday night exhibition.

GATUN.

The Cristobal Vaudeville Company will play at Gatun on April 3.

The meeting of the "Life problem's club" on Sunday, March 26, was well attenced. The subject for discussion was the "Theatre."

A debate on the subject "Resolved that it is more beneficial to live in the city than in the country" was participated in by Messrs. Dougherty, Fox, Colton, and Gilkie on Wednesday night, March 22.

CRISTOBAL.

In the bowling match between Gorgona and Cristobal duckpin teams on Saturday night, the following scores were made:

Gorgona.				Cristobal.			
Seebt.......	80	77	82	Barrett.....	90	90	81
Madler.....	68	81	81	Furlong...	91	79	102
Otis........	96	92	87	Jacques...	82	92	80
Haggerty...	64	78	89	Louch.....	92	85	100
Orr.........	85	81	80	Herring...	79	94	100
Total.....	393	409	419	Total...	434	440	463

Dr. Lloyd Noland of Colon Hospital will conduct the "Life problem club" meeting on Wednesday night, using as his subject "Health and stimulants." The last meeting under the leadership of Judge Brown discussed "The family and the church."

The basketball trophy won by the Cristobal basketball team has arrived and is hung on one of the walls of the building.

Twenty-five new books have been added to the library.

The following vessels arrived at or departed from the port of Balboa during the week ending March 25, 1911:

Arrivals—March 19, *Rupanco*, from Guayaquil; March 20, *Chile*, from Valparaiso; March 22, *Leelanaw*, from San Francisco; March 23, *Acapulco*, from San Francisco.

Departures—March 20, *Ucayali*, to Callao; March 22, *Riverside*, and *Sydney*, to San Francisco; *Quito*, to Buenaventura; *Aysen*, to Valparaiso; March 24; *Aztec*, to San Francisco.

PANAMA CANAL BASEBALL LEAGUE.

Panama Canal Baseball League Batting Averages.

The batting averages of players in the Panama Canal Baseball League, who have played in three or more games, for the season, which terminated on February 22, follow:

NAME AND CLUB.	G.	AB.	R.	H.	SB.	SH.	AV.
Buchanan, C.-S..	3	13	3	7	0	0	.538
Curtis, C.-S.....	9	31	10	15	8	4	.484
Barnes, E....	4	11	1	5	0	0	.455
Drennan, L., An.	10	36	11	15	5	3	.417
Marshall, E.....	4	10	1	4	0	0	.400
Meegan, C.-S...	4	11	3	4	2	1	.364
Mosher, C.-S....	9	36	9	13	1	3	.361
Drennan, R., An.	10	39	12	14	8	0	.359
Potter, A........	9	40	12	14	3	1	.350
Edwards, At....	8	30	4	10	6	3	.333
Dixon, E........	3	9	1	3	2	2	.333
Munsen, M.....	3	9	3	1	0	0	.333
Emery, G......	6	22	5	7	2	0	.328
Tretter, G......	7	25	2	8	0	0	.320
Caldwell, An....	8	35	5	11	5	1	.314
Barney, G......	7	26	4	8	2	3	.308
Smith, R., An...	8	38	7	11	2	1	.289
Murphy, E.....	7	21	5	6	3	1	.286
Gamble, At.....	8	28	4	8	3	2	.286
Breivogle, C.-S..	9	36	8	10	3	1	.278
Briggs, G.......	7	29	4	8	1	0	.276
Tinsley, An.....	9	41	7	11	1	2	.268
Richards, M....	3	4	1	1	0	0	.250
Wright, G......	7	29	3	7	1	0	.241
Maguire, M.....	7	25	3	6	3	0	.240
Austin, M......	5	17	2	4	1	0	.235
James, An......	7	27	2	6	3	2	.222
Guptil, C.-S....	5	18	2	4	0	0	.222
Kellogg, C.-S....	8	27	3	6	2	2	.222
Kenyon, M.....	3	9	1	2	1	0	.222
Sullivan, C.-S...	7	32	5	7	4	0	.219
VanZandt, An.-E	6	14	6	3	1	0	.214
Markley, E.....	7	24	4	5	9	0	.208
Sullivan, At.....	8	24	5	5	5	1	.208
Kaufman, At...	3	10	2	2	1	0	.200
Beard, C.-S.....	3	10	0	2	0	0	.200
Hennessey, At...	8	26	5	5	8	0	.192
Pearman, An.-At	7	21	4	4	3	0	.190
Clements, G....	7	27	4	5	4	0	.185
Nygren, An.....	9	27	7	5	1	4	.185
McCusty, C.-S..	3	11	3	2	1	0	.182
Hodnett, C.-S...	9	28	6	5	1	4	.179
Davis, At.......	7	17	4	3	4	0	.176
Thompson, At...	6	17	1	3	2	0	.176
Field, M........	7	23	4	4	0	0	.174
McCabe, M.....	6	24	3	4	3	0	.167
Jones, C.- S.....	3	12	2	2	1	0	.166
Toone, E.......	7	19	7	3	1	1	.158
Shepard, M.....	7	26	1	4	2	2	.154
Silke, M........	6	26	1	4	4	0	.154
Murray, An.....	6	13	2	2	0	1	.154
Russell, An.....	3	7	3	1	0	1	.143
Bailey, G.......	3	7	0	1	0	0	.143
Burns, M.......	6	14	3	2	0	1	.143
McKelvey, M...	6	22	2	3	1	2	.136
Guskie, M......	4	15	1	2	0	0	.133
Cuffin, C.-S.....	6	24	4	3	2	1	.125
Bryan, E.......	7	25	1	3	0	2	.120
Ridge, G.......	5	17	2	2	0	2	.118
Johnston, At....	4	9	0	1	0	0	.111
Moore, E.......	6	18	2	2	1	1	.111
Buckley, M.....	5	9	0	1	0	2	.111
Hull, An.......	6	19	2	2	1	0	.105
Herring, G., At..	8	30	3	3	3	1	.100
Osborne, At.....	8	30	2	3	1	1	.100
Bell, E.........	6	20	2	2	0	2	.100
Hunter, An.....	4	12	0	1	0	2	.083
Fluharty, E.....	5	12	1	1	0	2	.083
Fullerton, G....	4	12	0	1	0	0	.083
Calvert, G......	4	15	1	1	0	0	.067
Daugherty, At. E	4	13	0	0	0	2	.000
Lyon, E........	3	5	0	0	1	3	.000

TEAM AVERAGES.

CLUB.	G.	AB.	R.	H.	SB.	SH.	AV.
Com.-Sub..	9	308	62	85	26	16	.276
Ancon.....	10	366	77	99	36	21	.270
Gorgona....	7	232	27	50	14	5	.216
Empire....	7	197	29	36	17	14	.183
Marines...	7	230	23	41	16	7	.178
Atlantics..	8	255	31	44	34	10	.173
Average for the league	8	1,588	249	355	143	73	.224

RESULTS OF GAMES, MARCH 26.

At Ancon—Commissary-Subsistence, 11; Ancon, 1.
At Empire—Atlantics, 2; Empire, 6

STANDING OF CLUBS.

	P.	W.	L.	P.C.		P.	W.	L.	P.C.
Com-Sub.	5	5	0	1.000	Empire ..	5	2	3	.400
Atlantics..	5	2	3	.400	Ancon ...	5	1	4	.200

SCHEDULE OF GAMES, APRIL 2.

At Colon—Empire vs Commissary-Sub (Benefit).
At Ancon—Atlantics vs Ancon.

SUMMARY OF GAME, MARCH 26.

Atlantics	AB.	H.	PO.	A.	E.	Empire	AB.	H.	PO.	A.	E.
Hennessy, ss	4	0	0	4	1	Bryan, 3b...	4	1	0	1	0
Edwards, 1b	4	1	13	2	0	Markley, 2b.	3	1	1	1	0
Emerson, lf.	4	3	0	0	0	Barney, c...	3	1	10	5	0
TSulli'n, 3b.	4	1	3	1	1	Dixon, ss...	4	1	2	1	0
Reeves, 2b..	2	0	0	0	0	Dough'ty, rf	2	1	1	1	0
WSulli'n, cf.	3	0	2	0	0	VanZandt, lf	3	0	2	0	0
Davis, rf...	3	1	0	0	0	Murphy, cf..	3	0	0	0	0
Lyon, c....	2	0	6	1	1	Bell, 1b.....	2	0	9	1	0
Horrigan, p.	3	1	0	4	0	Barnes, p...	2	1	1	2	0
Totlas...	29	7	24	12	3	Totals...	26	6	*26	12	0

*T. Sullivan out on infield fly.

Hennessy ran for Reeves in 7th inning.

Atlantics..........	1	0	0	1	0	0	0	0	0	—2
Empire.............	0	0	1	1	3	0	0	1	x	—6

Runs—Atlantics: Edwards, Emerson; Empire: Bryan, Markley, Barney (3), Bell. Earned Runs—Atlantics, 2; Empire, 2. Home run—Barney. Three base hit—Markley. Two base hit—Emerson, Dougherty. Stolen bases—Edwards, Horrigan, Barney (2), Dixon, Van Zandt (4), Bell. Sacrifice hits—Reeves, Dougherty (2), Barnes. First base on balls—Off Horrigan, 2; off Barnes, 1. Left on bases—Atlantics, 3; Empire, 3. First base on errors—Empire, 1. Struck out—By Horrigan, 4; by Barnes, 9. Double plays—Edwards, unassisted; Horrigan to Edwards to Lyon. Hit by pitcher—By Horrigan, 1 (Markley); by Barnes, 1 (Lyon). Wild pitch—Horrigan. Umpire—Booth. Time of game—1.40. Scorer—Moeller.

The Corozal baseball team defeated Balboa, on the latter's grounds, on Sunday, March 26, by a score of 18 to 2.

The benefit game for C. C. Fitzpatrick at Empire on March 19, netted him about $1,100.

A Porto Bello baseball association has been organized and would like to hear from all first class baseball teams on the Isthmus, games to be played either at Porto Bello or on the Zone proper. Address Wm. Russell, Manager, Porto Bello.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Las Cascadas, C. Z., on Sunday, April 2, 1911, at 6 p. m. The program follows:

1 March—*President Emeritus*............Boehnlein
2 Selection—*Romeo and Juliet*.............Gounod
3 Characteristique Moreeau—*A Trombone Mixup*..........................Dorsey
4 Overture—*Martha*......................Flotow
5 Flower Song—*Sweet Summer Rose*.......Armand
6 Waltz—*Heart Murmurs*..................Rolfe
7 Intermezzo—*Flower Girl*................Wenrich
8 Descriptive—*A Hunting Scene*.........Bucalossi
9 March—*Festal Day*.......................Roux

Chas. E. Jennings, *Musical Director.*

The next concert will be given at the Hotel Tivoli on Sunday, April 9, at 7. 30 p. m.

Estate of Gregorio Perez.

Creditors of the above estate are hereby notified to file their claims with the Circuit Court Clerk, Ancon, or the same will be barred at the expiration of the minimum term fixed by the Code.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending April 5, 1911 (75th meridian time):

DATE.	Low.	High.	Low.	High.	Low.
	A. M.	A. M.	A. M.	P. M.	P. M.
March 30.......	......	3.35	9.47	3.50	10.10
March 31.......	......	4.15	10.28	4.30	10.50
April 1.........	......	4.55	11.10	5.10	11.30
April 2.........	......	5.35	11.50	5.50	......
			P. M.		
April 3.........	12.10	6.15	12.30	6.30	......
April 4.........	12.55	7.00	1.15	7.15	......
April 5.........	1.45	7.48	2.08	8.08	......

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, March 25, 1911. All heights are in feet above mean sea level.

DATE AND DATE	STATION.				
	Vigia.	Alhajuala	Gamboa.	Bohio.	Gatun Lake.
Sun. March 19.	125.7	92.2	44.8	12.4	12.4
Mo. March 20.	125.6	92.1	44.7	12.4	12.4
Tues. March 21	125.7	92.2	44.7	12.4	12.4
Wed. March 22.	125.7	92.2	44.8	12.4	12.4
Thurs. March 23	125.7	92.2	44.8	12.4	12.4
Fri. March 24..	125.8	92.3	44.9	12.4	12.4
Sat. March 25..	125.7	92.2	44.8	12.4	12.4
Height of low water.......	125.0	92.0	45.0		

OFFICIAL CIRCULARS.

Spare Parts and Materials to be Turned into Store.

CULEBRA, C. Z., March 20, 1911.

CIRCULAR No. 377:

The drawing by construction divisions from storehouses of spare parts and material for anticipated future needs, and the retention thereof either on the work or in storehouses not under the Chief Quartermaster, has resulted in the acccumulation of a larger stock of some articles than is necessary, and in the making of articles of which an adequate supply was on hand, but the existence of which was not known to the proper officials.

It is therefore directed that officials of the construction divisions turn over to the nearest quartermaster's storehouse all spare parts and material that are not required for immediate use, and that in future no spare part or material shall be drawn from the Quartermaster's Department until actually required.

The keeping of limited quantities of spare parts in places not accesible to quartermaster's storehouses by the Mechanical Division and other shops charged with the making of repairs to rolling equipment, steam shovels, etc., is authorized, but a correct list of such parts and the number thereof at each place will be kept, and copies thereof furnished semi-annually to the Chief Quartermaster.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Rate for Head Waiter.

CULEBRA, C. Z., March 20, 1911.

CIRCULAR No. 299-K (Corrected):

The maximum rate of $75 a month is authorized for the position of Head Waiter, Subsistence Department.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Meteorologists and Tool Dresser.

CULEBRA, C. Z., March 21, 1911.

CIRCULAR No. 299-L:

The following designations and rates of pay are authorized in addition to those published in Circular No. 299:

Designation.	Unit.	Rate of pay.
Principal Meteorologist	Mo.	$175.00
Meteorologist	Mo.	162.50
Tool dresser	Hr.	.75

(Is applicable only to Mechanical Division.)

The rating of Principal Observer at $175 a month is hereby abolished.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Survey Laborers and Observers.

CULEBRA, C. Z., March 21, 1911.

CIRCULAR No. 229-O:

The special rates of $1.30 a day for Survey Laborers and $5 a month for Observers at Chepo and Chorrera are hereby authorized.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Photographs and Blue Prints.

CULEBRA, C. Z., March 21, 1911.

CIRCULAR No. 156-A:

That part of Circular No. 156, issued by the Acting Chairman and Chief Engineer, February 8, 1908, relating to the sale of photographs and blue prints, is hereby revoked.

In future, photographs and blue prints will be issued only for official use.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Planing Mill Work at Gorgona Shops.

CULEBRA, C. Z., March 21, 1911.

CIRCULAR No. 343-B:

Paragraphs 13 and 14 of Circular No. 343, dated August 25, 1910, are hereby revoked.

Effective April 1, 1911, all doors, wood sash, panel work, furniture of any kind not purchased under contract, all light wood work required to be mortised and tenoned, coffins; jack, mud and center blocks for steam shovels; tamping sticks, and other wood work carried in stock for issue, will be made by the Mechanical Division at Gorgona shops.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Reduction of Force in Shops.

CULEBRA, C. Z., March 23, 1911.

CIRCULAR No. 262-E:

Circular No. 262-D is hereby amended by the addition of the following paragraph:

12. *Reduction of Force*—Whenever a reduction in the force of artisans employed in any shop can be made, a list of the employes whose services can be dispensed with will be forwarded to the Inspector of Shops, and the latter will indicate the place and position to which they will be transferred, or recommend any other action to be taken in their cases. No artisans will hereafter be given five days' notice, or discharged on account of reduction of force, until after the recommendation of the Inspector of Shops has been received.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

In Charge of Relocation, P. R. R.

CULEBRA, C. Z., March 22, 1911.

CIRCULAR No. 378:

Effective March 23, 1911, Mr. H. P. Warren, Engineer of Construction, will be in charge of the relocation of the Panama railroad during the absence on leave of Lieutenant Frederick Mears.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Price of Rations at Colored Laborers' Kitchens.

CULEBRA, C. Z., March 23, 1911.

CIRCULAR No. 173-A:

Effective April 1, 1911, the price per ration in the Colored Laborers' Kitchens will be reduced, until further notice, from 30 cents per day, to 27 cents per day.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Employes on Labor and Other Trains.

CULEBRA, C. Z., March 25, 1911.

CIRCULAR No. 379:

All employes of the Isthmian Canal Commission and Panama Railroad Company, except members of train crews, are prohibited from jumping on and off moving locomotives, cars, or trains, and from riding on the roofs and platforms of cars of labor trains. Any employes violating this order render themselves liable to discharge.

Labor trains will come to a full stop at the regular places where passengers are either taken on or discharged in order that this order may be fully complied with.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Copies of Work Requests.

CULEBRA, C. Z., March 23, 1911.

HEADS OF DEPARTMENTS AND DIVISIONS:

As this office is not at all times furnished the proper number of copies of work requests (Form 159 C. E.-Revised) required by Circular 197-C and instructions subsequent thereto, the following is repeated for your guidance:

When the work to be performed exceeds an estimated cost of $50 and requires the approval of this office;

The orignal and nine copies should be forwarded for work to be done by the Panama Railroad Company;

The original and six copies should be forwarded for work to be done by the Central Division; and

The original and four copies should be forwarded for work to be done by any of the other departments or divisions. (Except as provided in Paragraph 3 of Circular 197-C.)

When the estimated cost of work does not exceed $50, it is necessary that this office be furnished two carbon copies of the request.

By direction of the Chairman.

C. A. MCILVAINE, *Chief Clerk.*

Money Orders for Costa Rica.

DEPARTMENT OF CIVIL ADMINISTRATION.
DIVISION OF POSTS, CUSTOMS, AND REVENUES.

ANCON, C. Z., March 23, 1911.

CIRCULAR No. 82:

To All Postmasters: A convention for the exchange of money orders between the Canal Zone and the Republic of Costa Rica has been entered into, effective April 1, and on and after that date you will issue money orders for payment at any post-offices in Costa Rica, and effect payment at your office upon money orders issued in Costa Rica for payment in the Canal Zone. The exchange of money orders with Costa Rica will be carried on practically along the same lines as our present domestic money order system. You will, however, note particularly the following:

Writing may be either in the English or Spanish language, but must be in Roman letters and Arabic numerals, without erasure, alteration or obliteration, and no money order shall contain a fraction of a cent, or of a centime. The maximum amount for which a single money order may be drawn is fixed at $100 U. S. currency. The amount of money orders in both directions shall be expressed in the money of the country of origin, and, because of the difference in value between the dollar of the United States and the colon of Costa Rica, and on account of the fluctuation in value of the currency of Costa Rica, it has been agreed that the amounts of all money orders shall be converted into their proper equivalents by the Postal Administration of Costa Rica, and that for this purpose that country shall make use of the money order exchange office at San Jose, to which all advices of money orders, issued in either country upon the other, shall be sent; and where the sum thus advised by the Postal Department of Costa Rica, for money orders drawn on the Canal Zone, shall be converted into U. S. money, at the current rate of exchange at the time of receipt of such advices by the exchange office. In like manner, the amounts named in advices of orders issued in the Canal Zone on Costa Rica shall, upon their arrival at the exchange office at San Jose, be converted into the currency of Costa Rica at the current rate of exchange on the day of the arrival of the advices.

The exchange office will write on each advice, in red ink, the amount to be paid in the currency of the country of destination, and dispatch the advices to the respective offices of payments, where the amount on the advice (in red ink) is to be paid on the corresponding order, and at the same time entered on the face of the order (at the time of payment) in red ink.

Advices shall be dispatched by the first mail after issue of the order to the exchange office at San Jose.

Application for second advices shall be complied with, and shall be sent to the exchange office at San Jose for certification and transmission to the office of payment.

Postmasters in Costa Rica and the Canal Zone may correspond with each other:

1. In making requests for second advices and complying with the same.
2. In making inquiries regarding the payment or repayment of orders.
3. In recalling advices of repaid orders.

Domestic money order fees will be collected on orders issued for payment in Costa Rica.

Costa Rica orders will be reported to this office and to the Auditor in the same manner as are all other orders. In the weekly reports the words "Costa Rica" should be stamped after each order drawn on that country. Rubber stamps for that purpose will be furnished you.

TOM M. COOKE, *Director of Posts.*

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal and Colon during the week ending March 25:

Advance, March 20, from New York, with 10 crates car wheels, 8 cases copper ladder rungs for Atlantic Division; 18 cases copper rungs, 293 tons structural material for Pacific Division; 80 pigs tin, 618 pieces castings for Mechanical Division; 2 barrels knuckles, 3 barrels twine, 7 casks crockery, 20 kegs rivets for stock; and a miscellaneous cargo, the whole consisting of 847 packages, weighing 79 tons.

Turrialba, March 23, from New Orleans, with 6 crates cement screens for Atlantic Division; 6 pieces castings for Mechanical Division; 32,175 feet, B. M., yellow pine lumber for stock.

Santa Marta, March 24, from New York, with 4 cases electrical material for Mechanical Division; 9 cases insulated wire, 114 barrels drift bolts for stock.

Panama, March 24, from New York, with 24 pieces castings, 36 pieces crusher machinery, 26 pieces steel castings for Atlantic Division; 24 pieces castings for Central Division; 260 bundles brake shoes, 7 packages electrical crane, 12 oxygen cylinders, empty, 6 acetylene cylinders, filled, 140 drums calcium carbide for Mechanical Division; 50 cases alcohol, 300 pieces steel plate, 65 bags feed, 6 cases range parts for stock; and a miscellaneous cargo, the whole consisting of 1,101 packages, weighing 162 tons.

Misdirected Letters.

ANCON, C. Z., March 29, 1911.

The following isufficiently addressed letters, originating in the United States and its possessions, have been received in the office of the Director of Posts, and may be secured upon request of the sddressee:

Allen, Harry
Anderson, Mrs. J. B.
Baldensperger, J. G.
Barningham, J. W.
Bell, Mrs. Eleanor Y.
Bewley, Mrs. Samuel
Bobb, W. T.
Brown, Miss Ellen A.
Browning, Miss Corrine P. F
Claffea, A. J.
Cragg, Frank
Doran, Thomas J.
Dougherty, Bruce T.
Earle, W. J.
Fisher, Clinton
Franks, Fred L.
Gorman, John
Healy, George
Hersh, S. J.
Jeffers, Peter
Kull, H. G.
Laing, R. A.
Lamkin, Frank
Lawrence, Charles
Lloyd, Howard
MacDonald, Prof. Donald F
Mayhue, F. O.
Morris, Lewis Samuel
Nigg, A.
Petty, Mrs. William N.
Pierson, Thos.
Pringle, W. A., Jr.
Scales, F.
Scheid, Mrs. George (photo)
Scoville, T. J. (2nd class)
Smith, Miss Francis
Smith, Mitchell (2)
Smith, M.
Thomas, Miss Emma C.
Vogt, Henry
Wickstrom, George
Wilson, Roland
Woodward, Max L.
Wood, Deciese Cheseley B.

Cold Storage Prices.

There are no changes in the prices of cold storage articles from those quoted in THE CANAL RECORD of March 15.

PANAMA OFFICIAL DIRECTORY.

President—Pablo Arosemena.
Substitute or Vice-President—Federico Boyd.

Departments of National Government.

Secretary of Government and Justice—Ramón F. Acevedo.
Sub Secretary—Adolfo Aleman.
Secretary of Foreign Affairs—Federico Boyd.
Sub Secretary—Eduardo Chiari.
Secretary of Finance—Aurelio Guardia.
Sub Secretary—Mario Galindo.
Secretary of Public Instruction—Heliodoro Patino.
Sub Secretary—Angel María Herrera.
Secretary of Fomento—Carlos C. Arosemena.
Sub Secretary—Luis E. Alfaro.
Director General of Statistics—Nicolas Victoria J.
Director General of Posts and Telegraphs—Juan J. Mendez.
Administrator General of Public Lands—Jeronimo J. García.
Treasurer General of the Republic—Pedro A. Diaz.

OFFICIALS OF THE PROVINCIAL AND MUNICIPAL GOVERNMENTS.

Governors of Provinces.

Panama—José A. Arango.
Colon—Rafael Neira A.
Bocas del Toro—Isidoro Hazera.
Coclé—Carlos George N.
Los Santos—Federico Barrera.
Veraguas—Oscar Fábrega.
Chiriqui—Salvador Jurado.

Municipalities of Panama and Colon.

Panama—Mayor (Alcalde), Federico Boyd, Jr.
Chief of Police—Leonidas Pretelt.
Captain of the Port—Carlos Berguido.
Postal Agent—Henrique Lewis.
Colon—Administrator of Finance—Gerardo Abrahams C.
Mayor (Alcalde), Emilio Clare.
Chief of Police—José de la R. Villamil.
Postal Agent—Alberto Mendoza.
Captain of the Port—Elias Aizpuru.

DIPLOMATIC CORPS.

Ministers Accredited to Panama.

United States of America—T. C. Dawson.
Netherlands—H. de Reus, residing in Caracas.
Peru—Federico A. Pezet.
Brazil—Antonio Fontoura Xavier, residing in New York.
Chile—Carlos Vergara Clark, residing in San José, Costa Rica.
Antonio B. Agacio, Secretary of Legation, Panama,

Resident Ministers.

Great Britain—C. C. Mallet.
Ecuador—Ramón Arias, Jr.
Belgium, H. Henin, residing in San José, Guatemala.

Charge D'Affaires.

Spain—Juan F. Garces (ad interim).
France—H. A. M. Barre-Ponsignon.
Guatemala—J. M. Tamayo.
Salvador—Ernesto Boyd (ad interim).
United States of America—Charles Campbell, Jr. (ad interim).

CONSULAR CORPS.

(Residing in Panama.)

Consul Generals.

Bolivia—Samuel Boyd.
Chile—Antonio B. Agacio.
United States of America—Alban G. Snyder.
Guatemala—José Fernando Arango.
Honduras—Pedro Grave de Peralta.
Argentina—Mariano de Elia.
China—Owyang King.
Salvador—Ernesto Boyd (ad interim).
Mexico—Francisco Mallén.
Nicaragua—Carlos Chamorro y Chamorro.

Consuls.

Germany—Arturo Kohpcke.
Belgium—B. D. Fidanque.
Brazil—Ramón Arias F.
Costa Rica—Modesto Huete.
Denmark—S. L. Maduro.
Spain—Juan F. Garces.
France—H. A. M. Barre-Ponsignon.
Greece—Florencio Arosemena.
Holland—A. Jesurum, Jr.
Italy—Arturo Kohpcke.
Nicaragua—Julio Arjona Q.
Portugal—Ramón Arias F.
Sweden—B. Malo.
Santo Domingo—Mauricio Fidanque.
Cuba—Ernesto Arosemena.
Peru—Carlos Ferreyros.

Vice Consuls.

Chile—Juan Ehrman.
Spain—N. Perez Petinto.
Ecuador—Pedro Arias F.
Salvador—Federico O. Boyd.
France—Louis Thubbier.
Great Britain—D. F. S. Filliter.
E. S. Humber (ad interim).
Mexico—Baldomero Mendez.
Nicaragua—Federico O. Boyd.
Norway—Alexander Morrice.
Netherlands—David M. Sasso.

Proconsuls.

Great Britain—E. S. Humber.

Consular Agents.

Peru—H. R. Wilford.

(Residing in Havana.)

Consul Generals.

Norway—Jorgen Brunchorst.

(Residing in Colon.)

Consul Generals

Venezuela—F. de P. Boza C.

Consuls.

Germany—Alfredo Sange.
Austria-Hungary—Fco Ullrich.
Chile—Ernesto Jaramillo Aviles.
Costa Rica—Daniel Rojas P.
United States—J. C. Kellogg.
Mexico—H. M. Rojas.
Norway—H. B. Parker.
Holland—E. J. Henriquez.
Peru—H. R. Wilford.
Cuba—Luis F. Estenoz.
L. F. Estenoz, Jr. (ad interim).
Nicaragua—Eudaldo Bastar.

Vice Consuls.

Belgium—C. H. R. Raven.
Denmark—Joseph Fidanque
Spain—Antonio Andrade Polanco.
France—Emile Gey.
United States—J. M. Hyatt.
Great Britain—Harry Owen Chalkley.
Holland—J. J. Ecker, Sr.
Sweden—J. J. Ecker, Sr.
Santo Domingo—J. M. Fidanque.

Proconsuls.

Great Britain—William McAdam.

Consular Agents.

Italy—Segundo Rossi.

(Residing at Bocas del Toro.)

Consuls

Nicaragua—Pacifico Melendez P.
Costa Rica—Victor M. Dominguez.

Vice Consuls.

Germany—Carl Friese.
Norway—Harry Gilmore Green.
Great Britain—W. H. Pouton.

Consular Agents.

United States—Paul Osterhout.
France—Marie Marcel Hauradon.
Great Britain—Harry G. Green.

(Residing at David.)

Vice Consuls.

France—Eugene Loeffler.

Consular Agents.

United States—William D. Gillespie.
Great Britain—J. S. C. Preedy.

(Residing at Santiago (Veraguas.)

Consular Agent.

United States—Nathaniel I. Hill.

U. S. MARINE CORPS.

Headquarters Camp Elliott.

Major Smedley D. Butler, Commanding.
1st Lieutenant Harold F. Wirgman, Adjutant.

Rainfall from March 1 to 25, Inclusive.

Stations.	Maximum in one day	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	.25	15	.25
Balboa	0	....	0
*Miraflores	0	....	0
Pedro Miguel	.03	23	.03
Rio Grande	.06	23	.06
Central Section—			
Culebra	.06	23	.06
*Camacho	.11	23	.13
Empire	.20	23	.20
Gamboa	.18	2	.30
*Juan Mina	.10	14	.20
Alhajuela	.01	1	.01
*El Vigia	.03	21	.04
*Gorgona	.24	23	.24
San Pablo	.33	23	.46
Tabernilla	.44	23	.63
Bohio	.38	23	.97
*Monte Lirio	.38	21	1.38
Atlantic Section—			
Gatun	.61	2	1.48
*Brazos Brook	.31	25	.99
Cristobal	.38	25	1.01
Porto Bello	.39	2	†2.14
*Nombre de Dios	.15	3	.84

*Standard rain gage—Readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

†To 5 p. m., March 24.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Allianca	P. R. R.	Friday	Mar. 24
Colon	P. R. R.	Friday	Mar. 31
Advance	P. R. R.	Thursday	April 6
Panama	P. R. R.	Wednesday	April 12
Cristobal	P. R. R.	Tuesday	April 18
Ancon	P. R. R.	Monday	April 24
Allianca	P. R. R.	Saturday	April 29
Colon	P. R. R.	Saturday	May 6
Advance	P. R. R.	Friday	May 12
Panama	P. R. R.	Thursday	May 18
Allianca	P. R. R.	Wednesday	May 24
Colon	P. R. R.	Wednesday	May 31
Advance	P. R. R.	Tuesday	June 6
Panama	P. R. R.	Monday	June 12
Allianca	P. R. R.	Saturday	June 17
Colon	P. R. R.	Saturday	June 24

CRISTOBAL TO NEW YORK.

Advance	P. R. R.	Saturday	Mar. 25
Panama	P. R. R.	Friday	Mar. 31
Allianca	P. R. R.	Thursday	April 6
Colon	P. R. R.	Wednesday	April 12
Advance	P. R. R.	Tuesday	April 18
Panama	P. R. R.	Tuesday	April 25
Cristobal	P. R. R.	Tuesday	May 2
Ancon	P. R. R.	Monday	May 8
Allianca	P. R. R.	Friday	May 12
Colon	P. R. R.	Thursday	May 18
Advance	P. R. R.	Wednesday	May 24
Panama	P. R. R.	Wednesday	May 31
Allianca	P. R. R.	Tuesday	June [illegible]
Colon	P. R. R.	Tuesday	June 13
Advance	P. R. R.	Sunday	June 18
Panama	P. R. R.	Saturday	June 24

NEW YORK TO COLON.

Metapan	U. F. C.	Thursday	Mar. 23
Prinz Joachim*	H.-A.	Saturday	Mar. 25
Zacapa	U. F. C.	Thursday	Mar. 30
Prinz Eitel Friedrich	H.-A.	Friday	Mar. 31
Oruba	R. M.	Saturday	April 1
Almirante	U. F. C.	Thursday	April 6
Prinz Aug. Wilhelm*	H.-A.	Saturday	April 8
Santa Marta	U. F. C.	Thursday	April 13
Prinz Sigismund	H.-A.	Friday	April 14
Magdalena	R. M.	Saturday	April 15

COLON TO NEW YORK.

Prinz Aug. Wilhelm*	H.-A.	Tuesday	Mar. 28
Santa Marta	U. F. C.	Thursday	Mar. 30
Prinz Sigismund	H.-A.	Tuesday	April 4
Magdalena	R. M.	Tuesday	April 4
Metapan	U. F. C.	Thursday	April 6
Prinz Joachim*	H.-A.	Tuesday	April 11
Zacapa	U. F. C.	Thursday	April 13
Prinz Eitel Friedrich	H.-A.	Tuesday	April 18
Clyde	R. M.	Tuesday	April 18

NEW ORLEANS TO COLON.

Abangarez	U. F. C.	Saturday	Mar. 25
Heredia	U. F. C.	Wednesday	Mar. 29
Atenas	U. F. C.	Saturday	April 1
Cartago	U. F. C.	Wednesday	April 5
Turrialba	U. F. C.	Saturday	April 8
Parismina	U. F. C.	Wednesday	April 12
Abangarez	U. F. C.	Saturday	April 15

COLON TO NEW ORLEANS.

Turrialba	U. F. C.	Thursday	Mar. 30
Parismina	U. F. C.	Thursday	Mar. 30
Abangarez	U. F. C.	Thursday	April 6
Heredia	U. F. C.	Thursday	April 6
Atenas	U. F. C.	Thursday	April 13
Cartago	U. F. C.	Thursday	April 13
Turrialba	U. F. C.	Thursday	April 20

COLON TO BARBADOS, CALLING AT TRINIDAD.

Oruba	R. M.	Tuesday	April 11
Magdalena	R. M.	Tuesday	April 25

Hamburg-American steamers leave Colon for New York via Kingston every Tuesday at 10 a. m., and those designated (*) call at Santiago, Cuba; for Bocas del Toro and Port Limon on alternate Wednesdays, by ships designated (*).

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on Alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; for New Orleans via Port Limon and Puerto Barrios on Thursday at 4 p. m., and for New York on Thursday at 11 a. m.

The *Miltonian* of the Leyland line will sail for Tampa via Kingston on April 1.

Sailings of the French line (Ciè Gènèrale Transatlantique) for Venezuelan ports, Martinique and Guadeloupe on the 3d and 20th of each month.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, APRIL 5, 1911. No. 32.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Panama Railroad Hotel in Colon.

In accordance with a plan agreed upon by the President on his visit to the Isthmus in November, 1910, the Panama Railroad Company will construct a new hotel in Colon, on the site occupied by the present Washington House and adjacent buildings. It is probable that the material will be reinforced concrete. B. G. Goodhue of the firm of Cram, Goodhue & Ferguson, which has charge of the additions to the Military Academy at West Point, has been requested to confer with the President of the railroad company with regard to plans. Mr. Goodhue has made a study of Spanish architecture and it is probable that the new hotel will be of that class.

Highest Excavation Record in Central Division.

The total excavation in the Central Division for the month of March, 1911, amounted to 2,032,523 cubic yards, of which 2,012,469 cubic yards were excavated from the Canal prism, 13,618 from the Obispo diversion and 6,436 from other outside work.

From the Culebra section of the Central Division (Culebra Cut,) 1,729,588 cubic yards were excavated and from the Chagres section, 302,935 cubic yards.

The total excavation from the Canal prism (2,012,469) is the largest ever made in any one month in the Central Division since the commencement of work by the United States, the largest previous records having been 1,966,294 in March, 1909, and 1,987.714 in March, 1910. The total excavation in the Culebra section (1,729,588 cubic yards) was also the largest ever made in a single month, the highest previous records having been 1,434,597 in March, 1909, and 1,509,728 cubic yards in March, 1910.

The excavation of March, 1911, is undoubtedly the highest excavation in the prism that will ever be made within the limits of the Central Division for the reason that, owing to the completion of steam shovel work in the Chagres section within the next two or three weeks, except for two small remaining pieces which will be taken out in the next dry season, 10 shovels which worked in the month just passed, will be out of commission so far as future work in the Central Division is concerned.

Unloading Record in Pedro Miguel District.

On March 28, six unloaders working in the Pedro Miguel district of the Central Division, unloaded 82 Lidgerwood trains; and in addition there were handled seven 10-yard dump trains containing a total of 33,610 cubic yards of rock and earth. The Lidgerwood trains were composed of 20 cars, each car containing 19 cubic yards of material, the 10-yard dump trains being composed of 35 cars, each car containing 10 cubic yards. The material contained in these cars was wasted on the Miraflores and Balboa dumps, except seven Lidgerwood trains, or 2,660 cubic yards, which were dumped on the Panama railroad relocation.

The highest previous record was on January 7, when 80 Lidgerwood trains and seven 10-yard dump trains, containing a total of 32,850 cubic yards of rock and earth were unloaded.

New Fire Station at Cristobal.

The railway tracks to the proposed concrete docks at Cristobal will leave the main line of the Panama railroad at the entrance to the village, and run to the waterfront through the street on which the present fire station is situated. This will make it difficult for the apparatus to leave the house quickly and, in case a train happened to be running by when an alarm came in, there would be both delay and danger, at a time when a few minutes might make the difference between a small and a large fire. The station will be abandoned as a fire house, therefore, and a new station will be erected on the water front, at the corner of Roosevelt avenue and 11th street, oposite the Cristobal commissary, where the old rest house now stands. The new building will be 75 by 56 feet in dimensions, and two stories high. On the ground floor will be space for the fire apparatus, with four doors opening upon Roosevelt avenue, stalls for eight horses, and a storeroom, and a blacksmith shop. On the second floor there will be offices, a reading room, a room for the men to sleep in, and a hay storage room.

Sidewalks in Canal Zone Villages.

Sidewalks to be constructed in Cristobal, Gatun, and Ancon from this time forth will be made of concrete, and sidewalks in other Canal Zone villages will be built of the best material available at the time and place. The construction of board walks will not be continued, because they rot out quickly and the cost of maintaining them is therefore heavy. In Culebra, walks have been built recently of rock screenings from Ancon quarry, at an average cost of 40 cents per square yard for 1,107 feet of walk four feet wide. This class of walk is adapted only for the villages that will not be permanently occupied by Government forces after the completion of the Canal. In the permanent stations concrete walks costing one dollar or less a square yard will be constructed, because the low cost of upkeep over a term of years will make them the most economical kind of walk.

Fireproof Construction in Colon.

The Panama railroad has been directed to establish a storage pile for gravel in or near Colon from which people who wish to erect concrete buildings in that city may draw supplies of gravel. The price will be as low as possible, because it is desired to encourage fireproof construction. This movement was begun some weeks ago, and the municipal authorities now have under advisement a regulation forbidding any but fireproof construction in certain areas, especially those made available for buildings by the filling of the lowlands back of the present inhabited section. The gravel will be taken from the Chagres River above Gamboa Bridge and hauled to Colon, and enough will be stored to supply the demand. Concrete made from this gravel has been used with good results by the railroad in culverts and other permanent structures.

It is proposed also to make concrete blocks for sale at the lowest practicable price. This matter is under advisement by the General Superintendent of the railroad and the Chief Quartermaster of the Commission for the purpose of determining how the blocks may be manufactured most economically.

Explosives for 1912.

It is estimated that ten million pounds of dynamite will be required to carry on the Canal and Panama railroad work in the fiscal year ending June 30, 1912, and bids for that amount will be opened at the Washington office on April 14. The amount may be reduced or increased by 20 per cent at the option of the Commission. Saltpeter dynamite is specified, and the materials will be examined at the manufacturing plant, and analyses will be made to determine the variation in percentage of nitroglycerine. If there is a variation of three per cent or more from the contract strength, the dynamite will be rejected, and for a variation of more than one per cent and less than three, the dynamite will be accepted at a reduction of 15 cents per hundred pounds for each reduction of one per cent below the full contract percentage. Three classes are specified—45 per cent nitroglycerine in 8 by $1\frac{1}{4}$ inch cartridges, 6,500,000 pounds; 60 per cent, 3,300,000 pounds in 8 by $1\frac{1}{4}$ inch cartridges, and 200,000 pounds in cartidges 8 by 2 inches.

The quantity estimated for the present fiscal year was 13,727,000 pounds, with the

NOTES OF PROGRESS.

(Continued.)

option of increasing or decreasing it 50 per cent, but it is not probable that more than ten million pounds will be used. The orders under the contract are placed from month to month, the amount being determined by the consumption during the previous month and the probable needs of the coming month. The quantities used each year, compared with those specified for 1911 and 1912, are as follows:

Year.	*Pounds.*	*Year.*	*Pounds.*
1904*	500,000	1909	8,270,000
1906	1,400,000	1910	10,403,800
1907	5,087,000	1911†	13,727,000
1908	6,822,000	1912†	10,000,000

*Amount purchased for 1904 lasted during 1905.
†Estimate.

Of the total estimated for 1912, about 63 per cent is for the Central Division for use in Culebra Cut, 20 per cent for the Atlantic Division, 11 per cent for the Pacific Division, and 8 per cent for the Panama railroad relocation.

The estimate for blasting supplies to be used with the dynamite, provides for:

Blasting caps		580,000
Electric detonators—		
10 feet long	28,000	
16 feet long	49,000	
20 feet long	155,000	
24 feet long	262,000	
25 feet long	16,000	
30 feet long	225,000	
35 feet long	170,000	
40 feet long	76,500	
50 feet long	46,500	
60 feet long	25,000	
80 feet long	3,000	1,056,000
Safety fuse, feet		1,480,000
Tape, insulating, pounds		4,350
Wire, connecting, feet		636,000
Wire, lead, feet		496,500

The amount of blasting supplies specified may be reduced or increased by 50 per cent or less at the option of the Commission.

Gatun Dam Spillway.

The concrete work in the spillway of Gatun Dam is over 52 per cent completed, 130,184 cubic yards out of a total of 250,000 having been placed up to the close of work on April 1. A statement of the amount laid each day last week and of the total in place, follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
	Cu. Yds.		
March 27	364	17:00	2
March 28	368	17:00	2
March 29	284	16:00	2
March 30	328	17:00	2
March 31	298	15:00	2
April 1	228	14:00	2
Total	1,870	96:00	2
Previously reported	128,314		
Grand total	130,184		

Porto Bello Crusher.

A statement of the work done at the Porto Bello crusher, by days, for the week ending April 1, follows:

DATE.	Hours worked.	Cubic Yards.
March 27	6:05	2,930
March 28	7:49	3,453
March 29	7:23	3,378
March 30	6:49	3,022
March 31	7:25	3,427
April 1	6:50	3,244
Total	42:21	19,454

Sub-Aqueous Bones.

Two vertebrae 30 inches in diameter were dug up from beneath 20 feet of sand in Chamé bay on March 20 by the dredge *Gopher*, which is working in the Pacific Division sand service. The bones were sent to the office of the Chief Engineer in Culebra and will be made the subject of expert investigation.

New Railroad Time Table.

A complete time table of Panama railroad trains, effective on April 1, is published elsewhere in this issue. There is a change in the time of departure of train No. 8 from Miraflores, Pedro Miguel, Culebra and Empire, and the time of departure of train No. 5 from Gatun and Las Cascadas and intermediate stations is also changed. The schedule of trains run on Saturday and Sunday is changed a few minutes.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Over 59 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of work on April 1, being 1,238,751 cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending April 1, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers.		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
March 27	2,228	43:32	6	474	7:40	2	235½	2,937½
March 28	1,980	32:01	6	574	8:40	2	194¼	2,748¼
March 29	2,238	37:43	6	764	8:40	2	187	3,189
March 30	2,362	37:32	6	640	8:40	2	214	3,216
March 31	2,516	40;50	6	682	8:40	2	275¾	3,473¾
April 1	2,448	40:40	6	506	8:40	2	232¾	3,186¾
*Portable mixers				462½				462½
Total	13,772	232:18	6	4,066½	51:00	2	1,339¼	19,177¾
Previously reported								1,219,573½
Grand total								1,238,751¼

*The 426½ yards shown for the portable mixers are reinforced concrete, and were placed on the following days: March 27th, 54 yards; March 28th, 73 yards; March 29th, 75 yards; March 30th, 110½ yards; March 31st, 81 yards; April 1st, 33 yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Migue' is over 72 per cent completed, 606,512 cubic yards, out of a total of 837,400, having been placed at the close of work on April 1. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-Cubic yard mixers			AUXILIARY PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. ½-cubic yard mixer.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers.	Concrete placed.	Hours worked.	No. of mixers	Concrete Placed.	Hours worked	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
March 27.	1,218	18:00	2	692	13:67	3	129	7:75	1	....	2,039
March 28.	808	14:00	2	678	16:25	3	95	6:67	1	....	1,581
March 29.	808	13:00	2	622	14:50	3	108	6:83	1	....	1,538
March 30.	920	12:00	2	716	16:33	3	127	7:75	1	....	1,763
March 31.	794	12:00	2	416	11:50	3	113	7:50	1	....	1,323
April 1	960	14:00	2	514	11:75	3	116	7:00	1	....	1,590
Total	5,508	83:00	2	3,638	86:00	3	688	45:50	1	....	9,834
Previously reported										4,179	596,678
Grand total										4,179	606,512

MIRAFLORES LOCKS.

About 13 per cent of the concrete for the system of two twin locks at Miraflores was in place on April 1, the total amount on that date being 174,166 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. ½-cubic yard mixer.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
March 27.	302	14:00	2	232	5:00	2	897	43:50	6	3	1,536
March 28.	300	11:50	2	204	5:67	2	1,103	50:00	6	....	1,675
March 29.	124	5:00	2	232	5:00	2	738	37:50	5	....	1,171
March 30.	160	4:00	2	228	13:00	2	800	48:25	7	....	1,250
March 31.	196	4:50	2	250	5:30	2	869	59:00	7	....	1,334
April 1	....	....	......	272	5.67	2	800	47:00	7	....	1,193
	....	....	......	....	....	......	*449	38:50	1	....	....
Total	1,082	39:40	1.67	1,418	40:44	2	5,656	324:55	5:57	3	8,159
Previously reported										3,690	166,007
Grand total										3,693	174,166

*This 449 yards was mixed by a ½-yard mixer, the amounts for each day being: March 27th, 102 yards; March 28th, 68 yards; March 29th, 77 yards; March 30th, 62 yards; March 31st, 19 yards; April 1st, 121 yards.

SOCIAL LIFE OF THE ZONE.

Women's Organizations.

At the meeting of the Gatun Woman's Club on Friday, March 31, the quarterly election of officers was held, the following being chosen: President, Mrs. V. V. Sessions; vice-president, Mrs. James Allen; secretary, Mrs. Wilbur H. Lawrence; treasurer, Mrs. J. H. Hanna. Hereafter the meetings will be held on Thursday afternoon of each week instead of on Friday.

The next meeting of the Paraiso Woman's Club will be on Wednesday afternoon, April 12.

The Gatun Sunshine Society will hold a tea at the lodge hall on Thursday, April 13.

Church Notes.

The concrete Baptist church building was entirely gutted by the recent fire in Colon, and only a portion of the walls remain standing. Nothing was saved of the church furniture nor of the apartment in the second story, which was the pastor's residence. In connection with the church there was a school attended by about 300 Spanish, West Indian, and Chinese pupils. The church was erected in 1909 at a cost of $7,500, U. S. currency; $3,700 of this money being raised by local subscription, and the remainder being a grant of the Southern Baptist Mission Board. The pastor in charge is residing at the Baptist parsonage in Empire. Funds will be collected for the purpose of rebuilding the church at once.

During holy week, April 10 to 15, there will be services at St. Luke's Church, Ancon, as follows: On Monday, Tuesday, Wednesday, and Thursday at 7 and 9 a. m., and at 8 p. m.; on Friday at 7 and 9 a. m., and at 3 and 8 p. m.; on Saturday at 7 a. m. The services on Easter Sunday will be at 7 and 10 a. m. Sunday school at 9 a. m.

Masonic.

The first assembly of Isthmian Council No. 1, R. and S. M., was held at the lodge hall, Las Cascadas, on Saturday evening, April 1. The council degrees were conferred on a large class of Royal Arch Masons, after which a light lunch was served. The stated assemblies of the council will be held at Las Cascadas on the first Saturday night of each month at 8.15 o'clock. The recorder of the new body is J. B. Fields of Las Cascadas.

B. P. O. E.

At a meeting held in Colon on Sunday, April 2, the "Eleven O'Clock" club of Elks was organized and officers were elected. There will be a meeting at the Commission clubhouse, Cristobal, on Sunday, April 9, at 9 a. m., for the adoption of a constitution and by-laws. All Elks in good standing are requested to be present, and Elks on the Isthmus, whether wishing to join the club or not, are requested to send their names, present address, and lodge address to D. B. Walcutt, secretary, Cristobal.

Lawn Tennis.

The tournament in doubles for the Maduro-Lupi cup held in Panama on April 2, resulted:

Preliminary—Corozal failed to report and Panama won by default.

First round—Herrick-Runyon, Ancon, defeated Rogers-Tupper, Culebra, 6–0, 6–4; Deane-Fearon, Panama, defeated Smith-Wells, Gatun, 8–6, 2–6, 7–5; Farquharson-Hart, Colon, defeated Fechtig-Poole, Tivoli, 3–6, 6–3, 9–7; Bartholomew-Smith, Empire, defeated Dryden-Seville, Cristobal, 6–0, 6–3.

Semifinals—Herrick-Runyon, Ancon, defeated Deane-Fearon, Panama, 6–1, 6–4; Farquharson-Hart, Colon, defeated Bartholomew-Smith, Empire, 6–4, 8–6.

Finals—Herrick-Runyon, Ancon, defeated Farquharson-Hart, Colon, 6–4, 8–6, thus winning the cup for the season of 1911.

It was voted that the rule barring the winners of previous tournaments in doubles should not apply to this tournament, and that there should be no medals awarded; also that there be added to the schedule a tournament in doubles to be held May 30, 1911, on the Tivoli courts, to be goverened by the rules as reported by the secretary on January 1, and January 8. The next association tournament will be held in singles at Colon-Cristobal on May 7. Players will report at the Cristobal courts near the Y. M. C. A. ready for play at 9 a. m.

Personal.

Mr. T. B. Monniche returned to the Isthmus on the *Allianca*, arriving at Cristobal on March 30.

Obituary.

Mildred Hartson, the daughter of Frank J. Hartson of Culebra, died at Culebra on March 27, 1911. She was born in Danville, Ill., May 26, 1908, and had been on the Isthmus seven months.

Fatal Accident at Gatun.

Henry Joseph Marcotte, engineer of a locomotive crane was killed while at his work at Gatun on the afternoon of March 31. His crane was at work lifting concrete from the cars, on which it is carried from the auxillary mixing plant into the locks, when it overbalanced and fell, killing him instantly, and injuring the fireman. He was born in Detroit, Mich., 45 years ago, and from 1882 to 1893 was employed by the French canal company on the Isthmus, in administrative positions and as a dredgeman. From 1893 to 1909 he worked in the States, and in June, 1909, he returned to the Isthmus and entered the Canal service.

Missing Man.

Any one having information regarding the whereabouts of John Francis Sheridan, who left the service of the Commission in January, 1908, and of Devany J. Greelish, who is supposed to have been employed by the Commission in 1908,is requested to communicate with Charles W. Sass, 465 East 140th street, New York City.

Gorgona Lodge, International Association of Machinists, has adopted resolutions of sympathy on the death of John H. Hobrough who was killed in an accident at Toro Point on March 13, 1911.

In response to a petition signed by 96 persons a charter has been granted for the organization of a Canal Zone Chapter of the Order of the Eastern Star. An organizer will arrive on the Isthmus from New Orleans about May 4. There will be a meeting of those who wish to become charter members at Gorgona lodge hall on Sunday afternoon, April 23.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Hotel Tivoli, Ancon, C. Z., on Sunday, April 9, 1911, at 7.30 p. m.

EXECUTIVE ORDERS.

Justices of the Supreme Court.

Under authority vested in me by law, and until otherwise provided by law or ordered, Walter W. Warwick is appointed an Associate Justice of the Supreme Court of the Canal Zone, at a salary of six thousand dollars per annum, effective the day he enters on the duties of the office.

WM. H. TAFT,

THE WHITE HOUSE,
March 16, 1911.

Under authority vested in me by law, and until otherwise provided by law or ordered, Thomas E. Brown, Jr., is appointed an Associate Justice of the Supreme Court of the Canal Zone, at a salary of six thousand dollars ($6,000,) per annum, effective the day he enters on the duties of the office.

WM. H. TAFT,

THE WHITE HOUSE,
March 16, 1911.

Loss by Colon Fire.

It is estimated by the Superintendent of the Panama railroad that the value of buildings burned in the Colon fire of March 23, was $352,079. This does not include the value of stock in stores or of personal effects in houses. The values were obtained as far as possible from the tax lists in Colon, and, where this was not possible, from the owners of buildings. In all, 118 buildings were destroyed. The chief of the Colon fire department places the total loss at $400,000.

Ancon Quarry.

A statement of the rock crushed at Ancon quarry during the week ending April 1, 1911, follows:

DATE.	Hours worked.	Cubic Yards.
March 27	8:00	2,528
March 28	8:35	2,174
March 29	9:55	2,560
March 30	7:00	2,502
March 31	8:50	2,746
April 1	7:50	2,193
Total	50:00	14,703

Pacific Division Sand Service for March.

Sand was supplied in March by the Pacific Division service as follows:

DESTINATION.	Number of Cars.	Cubic Yards.
Pacific Division	2,676	40,140
Atlantic Division	30	698
Central Division	30	450
Quartermaster's Department	12	300
Panama railroad	8	200
Miscellaneous	10	240
Total	2,766	42,028

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, April 1, 1911. All heights are in feet above mean sea level.

DATE AND DATE	STATION.				
	Vigia.	Alhajuala	Gamboa.	Bohio.	Gatun Lake.
Sun. March 26	125.6	92.2	44.7	12.4	12.4
Mon. March 27	125.6	92.1	44.6	12.4	12.4
Tues. March 28	125.6	92.0	44.6	12.4	12.4
Wed. March 29	125.6	92.0	44.6	12.4	12.4
Thurs. March 30	125.6	92.0	44.6	12.3	12.3
Fri. March 31	125.5	92.0	44.6	12.2	12.2
Sat. April 1	125.5	92.0	44.5	12.2	12.2
Height of low water	125.0	92.0	44.0		

TRIANGULATION SURVEY.

Panama-Colon Datum Adopted March 23.

The primary triangulation of the Canal Zone has been completed by the Third Division of the Chief Engineer's office, and the Coast and Geodetic Survey has made its report on the final adjustment of the field data, which were sent to Washington for computation because the instruments and mechanical aids used in the special computations are not available on the Isthmus. The various stations in the network of triangles are shown in the drawing on this page.

The base line was laid off from a station on a small hill near the entrance to Tabernilla dumps to a hill back of Frijoles, a distance of 3,785.45 meters or about 2⅓ miles, and this was measured with Invar tapes in accordance with the methods of the Coast and Geodetic Survey, which were used throughout the survey. The primary net includes 19 stations stretching from Colon lighthouse on Manzanilla Point to Ancon Hill. Determinations for azimuth were based on the astronomical work done at Colon and Panama in previous years. The work done by the Commission was classed as secondary triangulation by the Coast and Geodetic Survey, the average closing error of a triangle being less than two seconds, and the length of the sides being from 10 to 13 miles. The triangulation work previously done by the Coast and Geodetic Survey in the vicinity of Colon was readjusted to bring it into accord with the Canal Zone triangulation system.

After the computations had been made to satisfy the condition and side equations, additional computations were made to carry the latitude and longitude from the Colon lighthouse through the triangulation system to the spire on the cathedral at Panama, these points having previously been used in the astronomical work noted above. Following the methods described in "The Figure of the Earth and Isostasy," by John F. Hayford, computations were made to adjust the previously determined astronomical stations to the distances as determined by the triangulation survey, and new values were given to the Colon lighthouse and cathedral spire stations.

In making the adjustments between the predetermined astronomical positions and the Canal Zone triangulation system, one of four positions had to be adopted as the standard datum: (1) The position carried forward from the observed latitude and longitude of Colon astronomical station; (2). the position carried forward from the observed latitude and longitude of Panama astronomical station; (3) the straight mean position as carried forward from the observed latitudes and longitudes of Colon and Panama astronomical stations; (4) the mean position as carried from the astronomical stations at Colon and Panama, using the observed latitude and longitude corrected for the computed effect of topography and compensation.

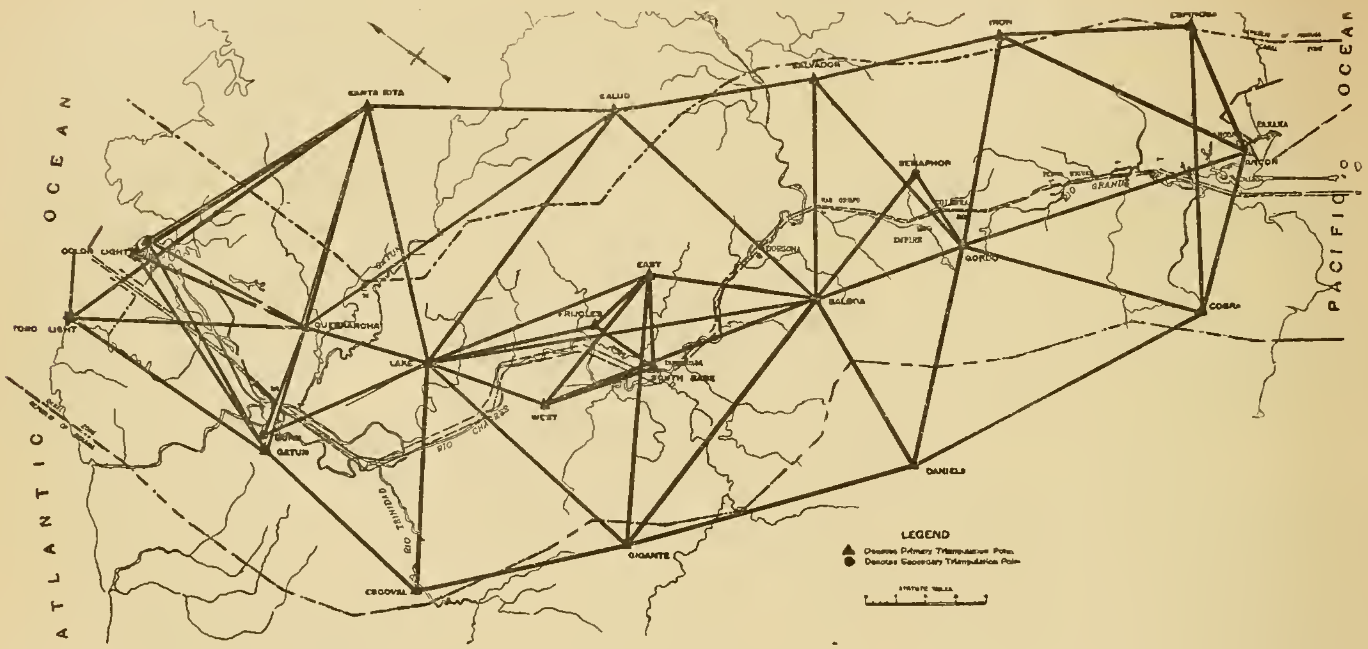
The advantage of adopting the first or second methods would be that the existing maps and charts, and the geographical positions at one end of the Zone, would remain undisturbed. The advantage of the fourth is that it gives geographical positions on the Zone which on an average would agree most closely with latitudes and longitudes observed in the future, and which also would agree most closely with data used in adjacent territory. The fourth plan was adopted by the Coast and Geodetic Survey with the positions as follows:

Colon lighthouse, latitude north, 9 degrees, 21 minutes, 55.314 seconds; longitude west from Greenwich, 79 degrees, 54 minutes, 38.811 seconds.

Balboa Hill, (Gorgona) latitude north, 9 degrees, 4 minutes, 57.637 seconds; longitude west, 79 degrees, 43 minutes, 50.313 seconds. This is the origin of the coordinates for the Zone land surveys which are based on the triangulation system.

Panama Cathedral spire, (east tower) latitude north, 8 degrees, 57 minutes, 13.676 seconds; longitude west, 79 degrees, 32 minutes, 16.516 seconds.

The new triangulation system has been made the standard for all survey and location work on the Canal Zone, and has been designated the "Panama-Colon Datum." Secondary triangulation stations, which will be convenient for local work, are being established on the Canal axis at Gatun, Tabernilla, Bas Obispo, and Pedro Miguel. By this system, and the line of precise levels previously run across the Isthmus, the surveys on all work of the Isthmian Canal Commission and Panama railroad are now referred to the same data, both for distances and for elevation.



CANAL ZONE TRIANGULATION SYSTEM.

CANAL MEDAL LIST.

The following is a list of American employes of the Isthmian Canal Commission, who completed two years' service on the Isthmus during the twelve months ending December 31, 1910, and for that reason are entitled to receive the Canal Medal. The date shown opposite each name is that from which medal service is reckoned.

The list is now published in order that it may be carefully checked by those interested. Any omissions, errors in the spelling of names or in the dates from which medal service is reckoned, should be reported to the Office of the Chairman, at Culebra, for correction.

In numbering the medals the relative standing of employes, whose medal service is reckoned from the same date, will be determined by lot. The list will be continued in THE CANAL RECORD of April 12, 1911.

Name.	*Date.*
1908.	
Brent, Raleigh C	Jan. 1
Chickering, William H	Jan. 1
Cooper, Edward J	Jan. 1
Ellsworth, Cornelia H	Jan. 1
Conway, James	Jan. 2
Kopp, Frank A	Jan. 2
Merritt, Henry F	Jan. 2
Blackwell, William D	Jan. 3
Bledsoe, Louis V	Jan. 3
Hoffman, George M	Jan. 4
Kirby, Edward	Jan. 4
Mack, Thomas	Jan. 4
Garrison, Albert D	Jan. 6
Sergison, Alexander	Jan. 6
Taylor, James W	Jan. 6
Thull, Peter J	Jan. 8
Dowd, Stephen H	Jan. 9
Kussmaul, Heory A	Jan. 9
Morris, Dallas	Jan. 9
Barningham, John W	Jan. 10
Graham, Alexander	Jan. 11
Maloney, Michael E	Jan. 11
Dibble, William H	Jan. 13
Lambert, Ed	Jan. 14
Vining, Jonn D	Jan. 14
Blunt, William T	Jan. 15
Fowler, Frank W	Jan. 15
Gilbert, Garfield O	Jan. 15
Holmes, William J	Jan. 15
Newburgh, Albert	Jan. 15
Newell, Henry F	Jan. 15
O'Brien, Patrick D	Jan. 15
Garlow, Edward	Jan. 16
Gamble, Neil M	Jan. 17
Kralce, William B	Jan. 20
Lathrop, Fred H	Jan. 20
Rule, Edgar	Jan. 20
Wurdemann, Ernest F	Jan. 20
Bolar, James M	Jan. 21
Cassell, George H	Jan. 21
Condon, Frank J	Jan. 21
McIntire, Leo A	Jan. 21
Silck, Joseph L	Jan. 21
Willett, George L	Jan. 21
Kenealy, William L	Jan. 22
Barkley, James M	Jan. 23
Ferguson, Harry L	Jan. 25
Delahunt, Harry G	Jan. 26
Hunter, William	Jan. 26
Neville, Edward J	Jan. 26
Shaw, William F	Jan. 26
Staples, Thomas O	Jan. 26
Corbett, Walter J	Jan. 27
Dorn, William F	Jan. 27
Van De Mark, Duane	Jan. 27
Yarborough, Grace	Jan. 29
Mhoon, John A	Jan. 31
Pender, Benjamin D	Jan. 31
Arena, Antonio	Feb. 1
Arndt, August H	Feb. 1
Evans, George H	Feb. 1
Farrar, Oliver S	Feb. 1
Healy, Frank V	Feb. 1
Hefke, Philip	Feb. 1
McKay, Max C	Feb. 1
Tenfelde, Bernard	Feb. 1
Terry, John Y	Feb. 1
Thornton, Charles E	Feb. 1
Williams, John H	Feb. 1
Glabb, Leo F	Feb. 3
Murray, Joseph D	Feb. 3
Grigsby, Francis C	Feb. 4
Martin, John A	Feb. 4
Avery, Alfred B	Feb. 5
Foust, Samuel M	Feb. 5
Hathaway, Louis	Feb. 5
McComb, William G	Feb. 5
Moser, Jack	Feb. 5
Stevenson, Harry D	Feb. 5
Clark, Edward R	Feb. 6
Smith, Carl D	Feb. 6
Brown, Charles A	Feb. 7
Hahn, Charles F	Feb. 7
Hull, J. B	Feb. 7
Corning, John M	Feb. 8
Walston, William H	Feb. 8
Booz, Thomas H	Feb. 10
Cody, Michael J	Feb. 10
Conley, John B	Feb. 11
Harris, Julius A	Feb. 11
Wickel, Henry	Feb. 11
Brown, Franklin M	Feb. 12
Chester, Charles S	Feb. 12
Hanna, John S	Feb. 12
Heslop, William J	Feb. 12
Kerat, John	Feb. 12
Barney, James E	Feb. 13
Bourgeois, Louis	Feb. 13
Burns, Lee	Feb. 13
Casey, Patrick J	Feb. 13
Grasley, Louis M	Feb. 13
Hussey, Claud	Feb. 13
Lasker, Fred	Feb. 13
Teese, Joseph W	Feb. 13
Dougherty, Frank F	Feb. 14
Lewis, George W	Feb. 14
Moore, Joseph	Feb. 14
Dunbar, George R	Feb. 15
Padden John J	Feb. 15
Anderson, Francis G	Feb. 17
Hunter, Alonzo	Feb. 17
Moore, Wade H	Feb. 17
Weldon, Hugh	Feb. 17
Clemens, Arthur C	Feb. 18
Kinney, Michael	Feb. 18
Calthirst, Percy	Feb. 19
McAuther, Semore	Feb. 19
Williams, Charles	Feb. 19
Marsh, Marvin M	Feb. 20
Witmer, William H., Jr.	Feb. 20
Brooks, Herbert	Feb. 21
Comrie, George R	Feb. 21
Newcomb, Howard S	Feb. 21
Purcell, John J	Feb. 21
Reed, Linus M	Feb. 21
Woolfolk, Thomas R	Feb. 21
Glendinning, Thos. T	Feb. 24
Racine, Leroy	Feb. 24
Schwalenberg, M. A	Feb. 24
Schutte, Fred'k W	Feb. 26
Bell, William S	Feb. 27
Henter, Charles	Feb. 27
Jacobs, Nelson	Feb. 27
Johnson, Joseph	Feb. 27
Reynolds, Henry J	Feb. 27
Miller, Michael J	Feb. 28
Spencer, Fred'k G	Mar. 1
Barron, Frank A	Mar. 2
Jamieson, John	Mar. 2
Kummers, Adolph P	Mar. 2
Ourand, Charles H	Mar. 2
Padden, John E	Mar. 2
Tomlinson, Henry G	Mar. 2
Watson, Lulu M	Mar. 2
Howard, George E. L	Mar. 3
Massen, John D	Mar. 4
Foust, Samuel M	Mar. 5
Moore, Sadie M	Mar. 6
Scoffern, Robert F	Mar. 6
Durning, William J	Mar. 7
Wilcox, John S	Mar. 8
Hayne, William	Mar. 9
Loeffler, Louis	Mar. 9
McLeod, Arthur T	Mar. 9
Minnix, Warren E	Mar. 9
Perkins, Fred C	Mar. 9
Farley, Bernard F	Mar. 10
Hollowell, Cooper	Mar. 10
Laherty, Edward	Mar. 10
Shore, Charles P	Mar. 10
Nelson, Edward	Mar. 11
Painter, Joseph H	Mar. 12
Chapman, Otto B	Mar. 14
Driver, John B	Mar. 14
Forman, Mary M	Mar. 14
Furbish, George H	Mar. 14
Giles, Arthur E	Mar. 14
Giles, Jessie H	Mar. 14
McKeever, Barnard E	Mar. 14
Wright, George F	Mar. 14
Grobe, John R	Mar. 17
Knapp, Edward H	Mar. 17
Albert, John L	Mar. 18
Groves, George W	Mar. 18
Humphreys, Joe K	Mar. 18
MacCormack Eliz'h H.	Mar. 18
Roettgering, Otto J	Mar. 18
Smith, Penny	Mar. 18
Stoddard, Charles R	Mar. 18
Sylvester, Olin K	Mar. 18
Walsh, John J	Mar. 18
Conrad, Herman	Mar. 19
Farnsworth, Arthur L	Mar. 19
Lewis, Louis	Mar. 19
Martin, George	Mar. 19
Smith, Paul W	Mar. 19
Diestel, Otto	Mar. 20
Hemming, Alfred	Mar. 20
Chouquette, Michael D	Mar. 21
Neal, Horace C	Mar. 21
Good, Ed	Mar. 23
MacDonald, John G	Mar. 23
Sutcliffe, John W	Mar. 24
White, Harry R	Mar. 24
Wilson, Frank E	Mar. 24
Kelleher, Thomas P	Mar. 25
Miller, Florence	Mar. 25
Owens, Thomas R	Mar. 25
Phipps, John H	Mar. 25
Rex, Arthur E	Mar. 25
Clough, Hartwell	Mar. 27
Jordan, Joseph T	Mar. 27
Morton, George D	Mar. 27
Foley, John R	Mar. 28
Davidson, Edward H	Mar. 30
Jones, Willard B	Mar. 30
Lee, Dan	Mar. 30
McCarthy, Francis P	Mar. 30
McCarty, William S	Mar. 30
Myers, James A	Mar. 30
Norman, James	Mar. 30
O'Brien, James M	Mar. 30
Parks, William S	Mar. 30
Smith, LeRoy E	Mar. 30
Stoney, William E	Mar. 30
Vickery, William J	Mar. 30
Crawford, William H	Apr. 1
Kelley, Daniel E	Apr. 1
Sheridan, John J. F	Apr. 1
Willett, Henry E	Apr. 1
Ernst, William A	Apr. 2
Johnson, Olof	Apr. 2
McCallum, George D	Apr. 2
Spencer, George E	Apr. 2
Tucker, Richard B	Apr. 2
Turrentine, Samuel	Apr. 2
Angel Joseph	Apr. 3
Barth, Frank G	Apr. 3
Belknap, Andrew G	Apr. 3
Doby, Walter F	Apr. 3
Fogerty, William	Apr. 3
Gannon, Margaret E	Apr. 3
Hackett, Michael W	Apr. 3
Joyce, Rufus W	Apr. 3
Kelley, Martin J	Apr. 3
Millar, Ray M	Apr. 3
Weir, James E	Apr. 3
Wilkstrom, Alexander	Apr. 3
McDevitt, John F	Apr. 4
Clark, Lucy G	Apr. 6
Hobbs, Frederick G	Apr. 6
Willis, Willard G	Apr. 6
Bunker, John H	Apr. 7
Spagna, John	Apr. 8
McCormick, Lawrence J.	Apr. 9
Shields, William	Apr. 9
Graff, Jacob	Apr. 10
King, Ray	Apr. 10
Robertson, Elmer H	Apr. 10
Powell, Travis L	Apr. 11
Allan, Thomas S. S	Apr. 13
Burke, Joseph L	Apr. 13
Ferguson, Fred P	Apr. 13
Hingerty, Clarence	Apr. 13
Howe, William H	Apr. 13
Kincaid, George W	Apr. 13
Moore, Arthur D	Apr. 13
VanFleet, Wilfred H	Apr. 13
Winquist, Charles	Apr. 13
Curtis, Wilfred S	Apr. 14
Nelson, George	Apr. 14
Kemp, John W	Apr. 15
Days, Joseph M	Apr. 16
Fullinwider, Rolla A	Apr. 16
Perry, James E	Apr. 16
Willett, Charles	Apr. 16
Brown, Frank R	Apr. 18
Hamilton, Ralph A	Apr. 18
Hughlings, Sydney P	Apr. 18
Fomon, Samuel	Apr. 20
Ledden, Mary E	Apr. 20
Safirstein, Benjamin	Apr. 20
Goulstone, Arthur J	Apr. 21
Hanbury, Joseph	Apr. 21
Shivers, Mary G. (Mrs.)	Apr. 21
Flavin, Thomas	Apr. 22
Frahn, August	Apr. 22
Sessions, Varner V	Apr. 22
Bird, James V	Apr. 23
Landers, James W	Apr. 23
Rancher, Stanley O	Apr. 23
Gibson, James	Apr. 24
Hobbs, Herbert C	Apr. 24
Marsh, Joseph S	Apr. 24
Hall, William F	Apr. 25
Jennings, Hiram W	Apr. 25
Grier, Charles L	Apr. 27
Marks, George S	Apr. 27
Clark, Lewis E	Apr. 28
Bardelson, Samuel	Apr. 29
Burrow, Bardon C	Apr. 29
Callahan, Stephen C	Apr. 29
Miltimore, William J	Apr. 29
Roper, Stuart D	Apr. 29
Smallwood, Albert D	Apr. 29
St. John, Smith W	Apr. 29
Wiley, Albert A	Apr. 29
Swab, Harry C	Apr. 30
Adams, Leon	May 1
Barrows, Charles B	May 1
Beaman, Don H	May 1
Boggs, Julian C	May 1
Milburn, James W	May 1
Wilcox, Boss	May 1
Dulaney, Tobe	May 2
Jewens, Nathan G	May 2
McGowan, Marie L	May 2
Kenealy, James N	May 4
Collins, John O	May 5
Gwynne, Jean S	May 5
Morgan, Robert P	May 5
Spencer, James G	May 5
Teimer, Richard	May 5
Oberle, Edwin J	May 6
Martell, Harry C	May 8
Sala, Francis L	May 8
Pinto, Thomas J	May 9
Braw, Fred J	May 10
Butler, John S	May 10
Crandall, Atmore L	May 10
McFee, Walter E	May 10
Miller, Ora	May 10
Morton, Frederick E	May 10
Reidy, Michael W	May 10
Williams, David F	May 10
Withrow, Robert E	May 10
Toombs, William A	May 11
Connor John	May 12
Grobe, William C	May 12
Irwin, Don E	May 12
Sheridan, Aloysius P	May 13
Sheridan, Thomas M	May 14
Dogan David	May 15
Frank, William	May 15
McLeod, John A	May 15
Reimann, Richard	May 15
Bates, Lewis B	May 16
Kemper, Roy E	May 16
Rinderle, Oliver F	May 16
Russell, Stacey C	May 16
Schweinshaut, John	May 16
Kenison, Nelson	May 18
Pfisterer, August	May 18
Schultz, Gilbert J	May 18
Bourion, Alade N	May 20
Casey, Will B	May 20
Craig, Richard A	May 20
Goldsmith, G. P	May 20
Hewitt, Justin H	May 20
Howe, Donald	May 20
Hunderlach, Edward A.	May 20
Pentz, Artemus W	May 20
Turgeon, Peter J	May 20
Ewing, Johnson C	May 21
Killeen, Patrick J	May 21
Bishop, Frederick A	May 22
Bonnell, Leander P	May 25
Callahan, William J	May 25
Callahan, William V	May 25
Hilleary, Chase M	May 25
Leathers, Frank C	May 25
LeMire, George E	May 25
McKeown, Henry	May 25
Owens, Joseph J	May 25
Sweeney, George F	May 25
Whitmarsh, Nelson	May 25
Williams, William M	May 25
Carty, Ella	May 26
McElroy, Asa D	May 26
Boehning, Edward F	May 27
McTucker, Ellis	May 27
Rottmann, Charles	May 27
Yale, Theodore H	May 28
Sneed, Hughes	May 29
Williams, Joseph D	May 31
Widemyer, Louis T	June 1
Wright, Ernest A	June 1
Carroll, John F	June 2
Greene, Jay L	June 2
Huson, Claude J	June 2
Ives, Fred W. B	June 2
Pflueger, Edwin B	June 2
Rath, Thomas J	June 2
Yerkes, Arthur W	June 4
Bailey, Cecil C	June 5
Campbell, John J	June 5
Cohen, Harry	June 5
Heslin, Thomas E	June 5
Kreiter, James M	June 5
McElroy, George N	June 5
Meyer, Max L	June 5
Naylor, Charles H	June 5
Noonan, Philip	June 5
Plummer, John C	June 5
Schneider, Barney	June 5
Sedwick, Harry F	June 5
Smalley, Isaac A	June 5
Warwick, Walter W	June 5
Weiss, John	June 5
Winegar, Otis E	June 5
Wright, Joseph W	June 5
Henton, Edward L	June 6
Hutchings, Robert W	June 6
Nylen, Charles A	June 6
Clayborn, Norl C	June 7
Cecil, Clyde	June 8
Dilfill, Clarence W	June 8
May, Duncan	June 8
Pettyjohn, James W	June 8
Martin, Nell	June 9
Pease, Charles U	June 9
Dryden, George A	June 10
Hatfield, Joseph	June 10
Hurey, David W	June 10
MacRae, L. M	June 10
Mahoney, Patrick S	June 10
Thompson, Anderson R	June 10
Percy, John W	June 11
Cornwell, Varney T	June 12
Shepherd, Victor	June 12
Miller, William	June 13
Schaberle, John A	June 13
Collier, Daniel T	June 14
Collins, Michael J	June 14

OFFICIAL CIRCULARS.

Changes in Organization and Increases in Pay.

CULEBRA, C. Z., March 28, 1911.

CIRCULAR No. 380:

The following excerpt from an act of Congress approved March 4, 1911, is quoted for your information and guidance:

"Except in cases of emergency, or conditions arising subsequent to and unforseen at the time of the passage of this Act, there shall not be employed at any time during the fiscal year nineteen hundred and twelve, under any of the foregoing appropriations for the Isthmian Canal, any greater number of persons than are specified in the notes submitted respectively in connection with the estimates for each of said appropriations in the annual book of estimates for said year, nor shall there be paid to any of such persons during that fiscal year any greater rate of compensation than was authorized to be paid to persons occupying the same or like positions on the first day of July, nineteen hundred and ten, and all employments made or compensation increased because of emergencies so arising shall be specifically set forth, with the reasons therefor, by the Chairman of the Commission in his report for the fiscal year nineteen hundred and twelve."

While this limitation on expenditures applies only to the fiscal year 1912, any application for increase in force or increase in pay received during the balance of the present fiscal year will have to be passed upon just as though the above quoted Act of Congress applied to the present fiscal year.

Hereafter, therefore, every application for increase in force or increase in pay, as compared with the approved organization as of July 1, 1910, as printed in the book of estimates for 1912, must be accompanied by a detailed statement of the emergency or conditions which have arisen to render same necessary, which can be submitted to Congress in accordance with the foregoing Act, if the application is approved by me.

In order that a complete record can be obtained and prepared in shape for submission to Congress as required, it is directed that all changes in the approved organization of July 1, 1910, which have been approved to date, be tabulated, and the specific reasons therefor stated, which statements should be forwarded to me not later than April 15, 1911. It will be noted that silver employes as well as gold employes are included in the provisions of this Act.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Curtailment of Special Trains.

CULEBRA, C. Z., March 29, 1911.

CIRCULAR No. 286-A:

The Panama Railroad Company now operates regular trains on Saturday nights for the convenience especially of employes who wish to attend entertainments of various kinds along the line, as it is desired to curtail the operation of Commission equipment specials over the Panama railroad tracks, this practice having grown to such proportions that it is deemed unsafe.

Hereafter, no permission will be granted to operate Commission equipment specials on Saturday nights, and will not be granted for other nights unless convincing reasons are given showing why the entertainment or function which they are to serve cannot be given on a Saturday night.

GEO. W. GOETHALS, *Chairman.*

Special Designations, Central Division.

CULEBRA, C. Z., March 29, 1911.

CIRCULAR, No. 229-P:

The following additional designations and rates of pay are hereby authorized for night repair gangs Central Division only:

Designation.	Unit.	Rate of Pay.
Boilermaker	Mo.	$30.00
Boilermaker	Mo.	40.00
Boilermaker	Mo.	50.00

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Issue of Commissary and Hotel Books.

CULEBRA, C. Z., March 31, 1911.

CIRCULAR No. 256C-:

The following amendments to Circular No. 256, dated May 28, 1909, are hereby made:

Paragraph 4 is changed to read as follows:

Employes are *required* to obtain, as far as practicable, all hotel and commissary books required by them for the month at one time.

Paragraph 8 is cancelled and in lieu thereof the following is substituted:

The issue of commissary books to gold employes will be limited to three-fourths of the amount of their monthly pay. Silver employes may draw commissary books up to the full amount of their pay, with the understanding that silver employes whose pay is over $50 U. S. currency per month will not be permitted to draw commissary books in an amount exceeding $50 in any one month.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

CULEBRA, C. Z., March 29, 1911.

HEADS OF DEPARTMENTS AND DIVISIONS:

Your attention is invited to the fact that it is the intention of Paragraph 3 of Circular No. 256, dated May 28, 1909, that coupon books can be obtained at any time during a month except on the last two and the first four days of each month by both gold and silver employes. I have been informed that this intention is not being carried out and that at the present time gold employes are in general not able to obtain coupon books during more than 70 per cent of the time—instead of the 80 per cent allowed by Circular No. 256—and silver employes during not more than 50 per cent of the time.

It is directed that you make such changes in the present methods in your respective departments and divisions as are practicable and necessary to secure compliance with the intention of this Circular without increase in force.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Good Friday, a Holiday.

CULEBRA, C. Z., March 30, 1911.

CIRCULAR No. 381:

So far as consistent with the transaction of public business, Friday, April 14 (Good Friday), will be observed as a holiday in the Canal Zone.

Good Friday is not included in the list of holidays for which gratuity pay is allowed, and pay for services performed on that day will be calculated the same as for Sundays.

Holy Thursday will be considered an ordinary working day and payment made accordingly.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Designation Engineer (Crane).

CULEBRA, C. Z., April 3, 1911.

CIRCULAR No. 229-Q:

The designation Engineer (Crane) at the rates of $50 and $60 a month is hereby authorized.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Leasing of a Building at Empire.

ANCON, C. Z., March 29, 1911.

Bids will be received by the Collector of Revenues, up to and including April 20, 1911, for the leasing to the highest bidder, from May 1, 1911, for a period of not more than three years, of building No. 16 at Empire owned by the Canal Zone Government The building is of French construction, two stories, and contains, in all, 12 rooms. Bids should be in envelopes marked, "Bids for a lease to Building No. 16 at Empire."

TOM M. COOKE, *Collector of Revenues.*

LOST—Watch fob with a Masonic and Kangaroo pin attached, between the Cristobal commissary and P. R. R. station, Colon, on Saturday, April 1, between 5.45 and 6 p. m. Finder kindly return to L. E. Burdge, care Depot Quartermaster, Mount Hope.

Rainfall from March 1 to 31, Inclusive.

STATIONS.	Maximum in one day	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
*Chorrera	0	....	0
Ancon	.25	15	.26
Balboa	0	....	0
*Miraflores	0	....	0
Pedro Miguel	.03	23	.03
Rio Grande	.06	23	.06
Central Section—			
Culebra	.06	23	.06
*Camacho	.11	23	.13
Empire	.20	23	.20
Gamboa	.18	2	.38
*Juan Mina	.10	14	.22
Alajuela	.01	1	.01
*El Vigia	.03	21	.04
*Gorgona	.24	23	.36
San Pablo	.33	23	.55
Tabernilla	.44	23	.66
Bohio	.38	23	.97
*Trinidad	.77	21	2.33
*Monte Lirio	.38	21	1.41
Atlantic Section—			
Gatun	.61	2	1.80
*Brazos Brook	.31	25	1.30
Cristobal	.38	25	1.41
Porto Bello	.39	2	2.38

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—value midnight to midnight.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

An entertainment company from the States known as the Yost Concert Party will give entertainments at the clubhouses during the present month. The company consists of Gaylord Yost, violinist; Ella Schroeder-Yost, violinist and pianist; Harietta Purcell Rowlen, soprano; Charles D. Rowlen, baritone, and Molly Jane Reed, reader. The dates so far arranged are as follows: Empire, April 8; Gatun, April 10; Corozal, April 11, Culebra, April 12; Cristobal, April 13; Gorgona, April 14; Porto Bello, April 21.

CULEBRA.

A chess match by wireless telegraph and telephone is in progress between the Culebra and Porto Bello chess clubs. The first move was made by Porto Bello on Saturday night and was the pawn to the king's fourth. Culebra answered with the black's pawn to the king's fourth. The plan of play is for each member of the club to study out what he thinks would be the best move, and that suggested by the majority is adopted. In this way the match is made a test of club strength rather than of the ability of individuals. The moves are transmitted from Porto Bello to Colon by aerogram, and from Colon to Culebra by telephone, and the replies of Culebra are sent back by reversing this process.

During the week ending April 1, Fox made a bigpin score of 205, the only one over 200. The 100, or over, scores for duckpins were made by the following: Case, 103, 101, 101; Fox, 103; Huttlemaier, 101; Kersey, 100, Hurst, 100.

The opening game of the Y. M. C. A. indoor baseball league will be played between Culebra and Gatun at Culebra on April 8, at 8.15 p. m.

The topic for discussion at the session of the topic club to be held on Monday evening, April 10, at 7.45, will be "Social and political service."

EMPIRE.

The following high scores were bowled on the alleys this week in duckpins: Henry, 101, 104, 102; Parkis, 111, 108, 112; McLeod, 107; Scull, 100, 104, 105; Goolsby, 101; Koperski, 106.

In the opening game of the indoor baseball league, Empire will play Gorgona at Gorgona on Saturday, April 8.

Baseball from all angles was dicussed under the direction of Umpire Irwin last Friday evening, March 31. There was a good attendance.

Sixty new books for the library have been received and fifty more are being ordered for delivery about May 1.

GORGONA.

The discussion club on Wednesday night, March 29, was led by S. J. Boyd; the topic was, "Who should own the land, the individual or the nation?" C. M. Benson will lead the discussion on Wednesday, April 5; the topic will be "Should immigration be restricted?"

GATUN.

At the moving picture entertainment on Thursday, March 30, Fred W. Clause of Cristobal assisted at the piano and G. Karl Weston sang several popular songs and recited an original poem. The next moving picture show will be given on Saturday, April 8.

The vaudeville show by the Cristobal Y. M. C. A. troupe at the Gatun clubhouse on Monday, April 3, was enjoyed by a large audience.

Mr. Ludwig announces that the physical classes will continue to be held on Tuesday and Friday nights, and that at 9 o'clock practice for indoor baseball will be held.

"Gambling" was the subject for discussion by the "Life problem's club" on Sunday night, April 2. The attendance of the club is increasing.

The literary club held a successful meeting on Wednesday night, March 28. The musical numbers were: Soprano solo, Mrs. A. O. Ludwig; bass solo, Mr. Hull; piano solo, Mrs, Johnson; baritone solo, Mr. Ourand; Mr. Young, the president, presided. The subject for discussion and debate was "Should foreign immigration be restricted," in which the following participated: Messrs. Whiting, Gilkie, Ludwig, Guarine and Jones. Mr. Young gave a recitation.

The results of the pool and billiard match held at Gatun on Saturday, April 1, are as follows: Pool—DePoorter (Gatun), 125; Hirsh (Empire), 80. Wilson (Gatun), 74; Pierson (Empire) 185. Billiards—Tounsley (Gatun), 100; Smith (Empire), 83. Mr. Hirsh and Mr. DePoorter will play a match game of 300 balls for the championship and gold medal; the first half to be played at Empire on Saturday, April 8, the second at Gatun on April 15.

Capt. Hodges' team defeated Capt. Duran's team in a match game of duckpins held on the night of March 28. Cristobal took all three games of duckpins at Gatun on April 1.

BASEBALL.

League Games Discontinued.

The free transportation granted to the Panama Canal Baseball League teams at the beginning of the season was withdrawn on April 1. The league finds it impossible to pay expenses under these conditions and the games scheduled for dates following April 1 have been cancelled. The schedule provided for games on April 2, 9, 14, 16, 23, 30, and May 7.

The team representing the Commissary and Subsistence Departments was in the lead at the close of the season, and the standing was as follows:

	P.	W.	L.	P.C.		P.	W.	L.	P.C.
Com-Sub.	5	5	0	1.000	Empire ..	5	2	3	.400
Atlantics..	5	2	3	.400	Ancon ...	5	1	4	.200

GAME PLAYED MARCH 26.

Ancon.	AB.	H.	PO.	A.	E.
RDren'n.cf.	4	1	3	0	0
LDren'n,rf.	4	0	0	0	1
Pearman,3b	4	1	3	0	2
Potter,ss...	4	0	0	2	1
Nygren,1b.	3	0	10	0	1
Hunter2b..	3	0	0	2	2
Caldwell,c.	3	1	8	2	0
Russell,p..	3	0	2	4	0
Hull,p.....	1	0	0	0	1
Murray,lf..	2	0	1	0	1
Totals...	31	3	27	10	9

C.-S.	AB.	H.	PO.	A.	E.
Buchanan,cf	5	2	1	0	0
Brievogle,lf.	5	2	0	0	0
Curtis,2b...	5	3	0	6	0
Meegan,c...	5	0	8	1	1
Rutherf'd,ss	5	2	1	3	1
Lacey,3b...	5	1	2	1	0
Ryan,rf....	5	1	0	0	0
Guptil,1b..	5	1	15	0	0
Mosher,p...	4	1	0	3	0
Totals....	44	13	27	14	2

Ancon............	1	0	0	0	0	0	0	0	0— 1
Com.-Subsistence..	5	3	1	0	0	0	1	0	1—11

Runs—Ancon: R. Drennan; C.-S.: Buchanan, Brievogle (2), Curtis (2), Meegan, Rutherford, Lacey (2), Ryan, Guptil. Runs earned—C.-S., 4. Two base hit—Ryan. Home run—Lacey. Stolen bases—Rutherford (2). Struck out—By Hull, 2; by, Russell, 3; by Mosher, 8. Left on bases—Ancon, 3; C.-S., 6. Umpire—Lawler. Time of game—2.00. Scorer—B. W. Payne.

A baseball game between the Second Atlantic team and a team from Gorgona at Colon on April 2, resulted 7 to 2 in favor of Gorgona.

At Ancon, on April 2, a picked team defeated a team from the U. S. S. *Yorktown* by a score of 10 to 5.

Benefit Game at Colon.

The Empire and Commissary-Subsistence teams played a benefit game of baseball for the Colon fire relief fund on Sunday afternoon, April 2. The score follows:

Empire.	AB.	H.	PO.	A.	E.
Bryan,3b..	4	2	0	3	1
Markley,c.	4	2	6	3	3
Murphy,cf.	4	0	0	0	1
VanZandt,lf	4	2	0	0	0
Doughy,2b.	4	2	2	2	0
Toone,ss...	4	0	6	3	0
Bell,1b....	4	1	9	1	2
Lyon,rf....	3	0	0	0	0
Marshall,p.	3	0	1	3	0
Totals...	34	9	24	15	7

C.-S.	AB.	H.	PO.	A.	E.
Buchanan,cf	4	0	1	1	0
Brievogle,lf.	4	1	0	0	0
Curtis,ss...	3	2	2	3	2
Meegan,c..	3	0	12	2	0
Lacey,3b...	2	1	1	2	0
Kellogg,1b.	4	0	6	0	1
Ryan,2b...	4	3	1	1	1
Guptil,rf...	4	0	3	2	0
Mosher,p...	4	1	0	0	0
Totals...	32	8	*26	11	4

*Lyon out for foul bunt on 3rd strike.

Empire...........	1	0	0	0	0	1	0	1	0— 3
Com.-Subsistence..	0	2	0	4	1	0	2	1	x—10

Runs—Empire: Bryan (2), Markley; C.-S.: Buchanan, Curtis (2), Kellogg (2), Ryan (3), Guptil, Mosher. Runs earned—Empire, 2; C.-S., 6. Two base hits—Markley, VanZandt, Ryan. Home runs—Ryan, Mosher, Bryan. Sacrifice hit—Lacey. Stolen bases—Meegan, Kellogg, Ryan. First base on errors—By Empire, 3; by C.-S., 2. Bases on balls—Off Marshall, 3. Struck out—By Mosher, 10; by Marshall, 6. Hit by pitcher—By Marshall, 1 (Curtis). Wild pitch—Marshall, 3. Left on bases—Empire, 4; C.-S., 2. Double play—Curtis to Guptil. Umpire—Irwin. Time of game—2.10. Scorer—J. P. Mead.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending April 12, 1911 (75th meridian time):

Date.	High.	Low.	High.	Low.	High.
	A. M.	A. M.	A. M.	P. M.	P. M.
April 6.........	......	2.38	8.42	3.08	9.08
April 7.........	......	3.40	9.52	4.22	10.23
April 8.........	......	4.57	11.17	5.45	11.50
			P. M.		
April 9.........	......	6.17	12.40	7.00	......
April 10........	1.12	7.27	1.45	8.00	......
April 11........	2.15	8.22	2.40	8.52	......
April 12........	3.07	9.12	3.23	9.37	......

PANAMA RAILROAD COMPANY.

PASSENGER TRAIN TIME TABLE No. 9—IN EFFECT APRIL 1, 1911.

SOUTHWARD.

SATURDAY ONLY.		SUNDAY ONLY.					DAILY EXCEPT SUNDAY.			Miles from Colon.	STATIONS.
73	71	29	27	25	23	21	7	5	3		
P. M.	P. M.	P. M.	P. M.	P. M.	A. M.	A. M.	P. M.	A. M.	A. M.		Leave. Arr.
10.45	6.00	7.00	4.00	1.00	10.00	6.45	4.35	10.30	5 25	0.00	†Colon.........
s 10.50	s 6.05	s 7.05	s 4.05	s 1.05	s 10.05	s 6 50	4.39	10.33	s 5.30	1.77	†Mt. Hope ...
10.55	6.10	f 7.10	4.10	1.10	f 10.10	6.55	4.45	10.38	s 5.36	4.37	†Mindi ....
f 11.00	f 6.15	f 7.15			f 10.15				s 5.41	5 94	New Gatun...
s 11.03	s 6 18	s 7.18	s 4.18	s 1.18	s 10.18	s 7.01	s 4.51	s 10.44	s 5.44	6.79	†Gatun.........
f 11.2	f 6.36	s 7.36	f 4.36	f 1.36	f 10.36	f 7.19	s 5.11	s 11.03	s 6.03	15.26	†Bohio ....
f 11 27	f 6 42	s 7 42	s 4 42	s 1 42	s 10.42	f 7.25	s 5.17	f 11.09	s 6.09	18 51	Frijoles........
s 11.33	s 6.48	s 7.48	s 4.48	s 1.48	s 10.48	s 7.31	s 5.23	s 11.15	s 6.15	21.37	†Tabernilla....
s 11.38	f 6.53	s 7.53	s 4.53	s 1.53	s 10 53	s 7.36	s 5.27	s 11.19	s 6.19	23 30	†San Pablo....
s 11.44	s 6.59	f 7.59	f 4.59	f 1.59	f 10.59	f 7.42	f 5.33	f 11.25	f 6.25	25 74	†Mamei ....
s 11.49	s 7 04	s 8.04	s 5.04	s 2.04	s 11.04	s 7.48	s 5.40	s 11.33	s 6 32	28.27	†Gorgona ......
s 11.54	s 7.09	s 8.09	s 5.09	s 2.09	s 11.09	s 7.53	s 5.45	s 11.38	s 6 37	29 68	†Matachin ....
s 11 59	s 7.14	s 8.14	s 5.14	s 2.14	s 11.14	s 7.58	s 5.49	s 11.42	s 6.42	31.01	†Bas Obispo...
A. M.											
s 12 05	s 7.21	s 8.20	s 5.20	s 2.20	s 11.20	s 8.04	s 5.55	s 11.48	s 6.49	32.62	Las Cascadas.
s 12.10	s 7.27	s 8.25	s 5.25	s 2.25	s 11.25	s 8.09	s 6.00	s 11.55	s 6.54	34.91	†Empire.......
								P. M.			
s 12.15	s 7.32	s 8.30	s 5.30	s 2.30	s 11 30	s 8 14	s 6.05	s 12.01	s 6.59	35.90	†Culebra ...
s 12.24	s 7.42	f 8.39	f 5.39	f 2.39	f 11.39	f 8.23	6.16	12 11	7.09	39.77	†Paraiso Jct...
s 12.26	s 7.45	s 8.41	s 5.41	s 2.41	s 11.41	s 8.25	s 6 18	s 12 13	s 7.11	40.15	†Pedro Miguel
s 12.31	s 7.49	s 8.46	s 5.46	s 2.46	s 11.46	s 8.30	s 6.24	s 12.19	s 7.16	41 66	Miraflores....
s 12.38	s 7.55	s 8.53	s 5.53	s 2.53	s 11.53	s 8.37	s 6.31	s 12.26	s 7 22	44.16	†Corozal ......
f 12.40	f 7.57	f 8.55	f 5.55	f 2.55	f 11.55	f 8.39	f 6 33	f 12.28	f 7.24	44.84	Camp Diablo
12.45	8.00	9.00	6.00	3.00	12.00	8.45	6.40	12.35	7.30	47.07	†Panama ..
A. M.	P. M.	P. M.	P. M.	P. M.	P. M.	A. M.	P. M.	P. M.	A M		Arr. Leave.
73	71	29	27	25	23	21	7	5	3		†Tel. station. f Flag station. s stop.

NORTHWARD.

STATIONS.	DAILY EXCEPT SUNDAY.				SUNDAY ONLY.						SAT. ONLY	SUN. ONLY
	2	4	6	8	20	2	24	26	28	30	72	74
Leave. Arr.	A. M.	P. M.	P. M.	P. M.	A. M.	P. M.	P. M.	P. M.	P. M	P. M.	P. M.	A M.
†Colon.........	8.35	12.50	3.35	7.35	8.45	12.00	3.00	6.00	9.00	11.40	9.30	2.00
†Mt. Hope ...	s 8.30	12.47	3.30	7.30	s 8.41	s 11.56	s 2.56	s 5.56	s 8.56	s 11.37	s 9.26	s 1.56
†Mindi	s 8.24	12.42	3.24	7.24	f 8.35	11.50	2 50	5.50	8.50	f 11.31	9.21	1.51
New Gatun...	s 8.19				s 8.30					f 11.26	f 9 16	1.46
†Gatun.........	s 8.17	s 12.38	s 3.19	s 7.17	s 8.27	s 11.44	s 2.44	s 5 41	s 8.44	s 11.24	s 9.14	s 1.44
†Bohio	s 7 58	f 12.16	f 2.59	s 6.56	s 8.05	s 11.25	s 2.25	s 5.25	s 8.25	f 11.05	f 8.55	f 1.25
Frijoles........	s 7.52	s 12.10	f 2.53	s 6.50	s 8.02	s 11.19	s 2.19	s 5.19	s 8.19	s 10.59	f 8.49	f 1.19
†Tabernilla....	s 7.46	s 12.04	s 2.47	s 6.44	s 7 56	s 11.13	s 2 13	s 5.13	s 8.13	s 10.53	s 8.43	s 1.13
		P. M.										
†San Pablo....	s 7.42	s 11.59	s 2.43	s 6.40	s 7.51	s 11.08	s 2.08	s 5.08	s 8.08	s 10.48	s 8.38	s 1.08
†Mamei	f 7.36	f 11.53	f 2.37	f 6.34	f 7.46	f 11.02	f 2.02	f 5 02	f 8.02	f 10.42	f 8.32	f 1.03
†Gorgona	s 7.29	s 11.46	s 2 30	s 6.28	s 7.41	s 10.57	s 1.57	s 4 57	s 7.57	s 10.37	s 8.27	s 12.58
†Matachin	s 7.24	s 11.41	s 2.25	s 6.23	s 7.36	s 10.52	s 1.52	s 4.52	s 7.52	s 10.32	s 8 21	s 12.53
†Bas Obispo...	s 7.20	s 11.37	s 2.21	s 6.19	s 7.31	s 10.47	s 1.47	s 4 47	s 7.47	f 10.27	8.16	s 12.48
Las Cascadas.	s 7.14	s 11.30	s 2.15	s 6.13	s 7.26	s 10.42	s 1.42	s 4.42	s 7.42	s 10.22	s 8.11	s 12.43
†Empire.......	s 7.09	s 11.25	s 2.10	s 6.08	s 7.21	s 10.37	s 1.37	s 4.37	s 7.37	s 10.17	s 8.05	s 12.38
†Culebra ...	s 7.04	s 11.20	s 2.04	s 6.01	s 7.16	s 10.32	s 1.32	s 4 32	s 7.32	s 10.12	s 7.59	f 12.33
†Paraiso Jct...	6.52	11.09	1.52	5.50	f 7.05	f 10.22	f 1.22	f 4.22	f 7.22	f 10.02	s 7.48	f 12.24
†Pedro Miguel	s 6.50	s 11.05	s 1.50	s 5.49	s 7.03	s 10.19	s 1.19	s 4.19	s 7.19	s 9.59	s 7.45	s 12.21
Miraflores....	s 6.45	s 11.00	s 1.45	s 5 44	s 6.58	s 10.14	s 1.14	s 4.14	s 7.14	f 9.54	s 7.41	s 12.15
†Corozal	s 6.38	s 10.53	s 1 38	s 5.38	s 6.52	s 10.07	s 1.07	s 4.07	s 7.07	s 9.47	f 7.35	f 12.08
Camp Diablo	s 6.35	f 10 50	f 1 35	f 5.35	f 6.49	f 10.04	f 1.04	f 4.04	f 7.04	f 9.44	f 7.33	12.05
†Panama ..	6.30	10.45	1.30	5.30	6.45	10.00	1.00	4.00	7.00	9.40	7.30	12 01
Arr. Leave.	A. M.	A. M.	P. M.	P. M.	A. M.	A. M.	P. M.	P. M.	P. M.	P. M.	P M	A. M.
†Tel. station. f Flag station. s stop.	2	4	6	8	20	22	24	26	28	30	72	74

GATUN SHUTTLE TRAIN.

DAILY EXCEPT SUNDAY.				STATIONS.	DAILY EXCEPT SUNDAY.			
37	35	33	31		32	34	36	38
P M.	P. M.	P. M.	A. M.	Leave. Arrive.	A. M.	P. M.	P. M.	P. M.
5.30	4.00	12.20	10.00	Colon	11.25	3.20	5 20	6.50
s 5.35	s 4.05	s 12.25	s 10 05	Mount Hope	s 11.20	s 3 15	s 5,15	s 6.45
s 5.40	s 4.10	s 12.30	s 10.10	Mindi	s 11.15	s 3.10	s 5.10	s 6.40
s 5.45	s 4.15	s 12.35	s 10.15	New Gatun	s 11.10	s 3.05	s 5.05	s 6.35
5.48	4.18	12.38	10.18	Gatun	11.07	3.02	5.02	6.32
				Arrive. Leave.				

BALBOA TRAIN

SOUTHWARD.

Sundays only.	Work-nights only.	DAILY.								STATIONS.
69	67	65	63	61	59	57	55	53	51	
P. M.	P. M.	P. M.	P. M.	P. M.	P. M.	A. M.	A. M.	A. M.	A. M.	Leave Arrive
9.30	10.50	6.45	5.35	1.50	12.30	10.40	7.45	6.35	5.30	Panama
9.45	11.00	6.55	5.50	2.00	12.45	10.50	8.00	6.50	5.45	Balboa
										Arrive Leave

NORTHWARD.

STATIONS.	DAILY.								Work-nights only .	Sundays only.
	50	52	54	56	58	60	62	64	66	68
Leave Arrive	A. M.	A. M.	A. M.	A. M.	P. M.	P. M.	P. M.	P. M.	P. M.	P. M.
Panama	6.20	7.40	10.30	11.25	1.25	5.25	6.15	7.35	11.25	10.00
Balboa	6.05	7.25	10.20	11.10	1.15	5.10	6.00	7.25	11.10	9.50
Arrive Leave										

COMMISSARY DEPARTMENT.

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning April 2.

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	6
Shoulder, neck trimmed off, (4 pounds and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg, (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing, per pound	10
Shoulder, for roasting (not under 4 pounds), per pound	12½
Chops—Shoulder, per pound	16
Chops, per pound	24
Loin for roasting, per pound	24
Cutlets, per pound	28
Pork, loin chops or roast, per pound	14
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	8
Corned, per pound	12, 14, 16
Chuck roast (3 pounds and over), per pound	12
Pot roast, per pound	12½
Rib roast, second cut (not under 3½ pounds), per pound	16
Rib roast, first cut (not under 3 pounds), per pound	18
Sirloin roast, per pound	19
Rump roast, per pound	19
Porterhouse roast, per pound	20
Steak, chuck, per pound	12½
Round, per pound	13
Rib, per pound	18
Sirloin, per pound	19
Rump, per pound	19
Porterhouse (not less than 1½ pounds), per pound	20
Tenderloin (Western) per pound	24
Tenderloin (Native), per pound	30

MISCELLANEOUS.

Caviare, Russian in ¼-lb. jars, per jar	85
Livers—Beef, per pound	7
Calf, each	60
Half, each	30
Sausage—Pork, per pound	15
Bologna, per pound	10
Frankfurter, per pound	12
Lieberwurst, per pound	10
Sweetbread —Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	23
½-dozen, only	12
Halibut, fresh, per pound	15
Oysters, in 1-quart kegs, keg	50
Oysters in ½-gallon kegs, keg	1.00

POULTRY AND GAME.

Chickens—Fancy roasting, milk fed, large, each	1.25
Fancy roasting, milk fed, med., each	1.00
Fancy roasting, corn fed, about 4½ pounds, each	*90
Fowls, each	60, 70, 80, 90, 1.00
Ducks, Western, about 4½ pounds, each	1.00
Long Island, each	1.30
Ducklings, Long Island, each	1.10
Broilers,, milk fed, each	60
corn fed, each	55
Turkeys, per pound	*26
Squabs, each	35
Capons	2.10
Rabbits, dressed, each	40
Pheasants, each	50
Partridges, each	50
Grouse, each	50

CURED AND PICKLED MEATS.

Ham—German, Westphalia, per pound	36
Sugar cured, per pound	18
Sliced, per pound	20
Half, for boiling, per pound	19
Boiled, per pound	25
Hocks, per pound	18
Picnic, Winchester, per pound	15
Bacon—Breakfast, whole piece, per pound	23
Breakfast, sliced, per pound	24
Beef, salt, family, per pound	9½
Pork, salt family, per pound	14
Ox Tongues each	75
Pigs' feet, per pound	9
Tongues, per pound	14
Sliced bacon in 1-pound tins, per tin	30
In 1-pound jars, per jar	30

DAIRY PRODUCTS.

	Price.
Butter—Creamery special, per pound	32
Cheese—Roquefort, per pound	38
Philadelphia cream, cake	10
Cheese—Young America, per pound	*18
Swiss, per pound	26
Edam, each	1.00
Camembert, in large tins, tin	38
Camembert, in small tins, tin	14
Neufchatel, cake	6
Gouda, per pound	34
Port de Salut, per pound	1.20
Milk (Inspected or certified), per bottle	**25
(Pasteurized), bottle	**18
Buttermilk, bottle	**15
Ice cream, quart	‡25
½-gallon	‡50

VEGETABLES AND FRUITS.

Beets, per pound	3
Celery, per head	6
Carrots, per pound	3
Cabbage, per pound	3
Cucumbers, per pound	[illegible]
Kale, per pound	[illegible]
Lettuce, per pound	†12
Onions, per pound	3½
Potatoes, white, per pound	2½
sweet, per pound	2
Parsnips per pound	3
Romaine per pound	10
Spinach, per pound	8
Tomatoes, per pound	8
Turnips, per pound	3
Yams, per pound	3
Apples, per pound	6
Grapefruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12
Tangerines, each	2

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*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Misdirected Letters.

Ancon, C. Z., April 5, 1911.

The following insufficiently addressed letters originating in the United States and its possesions have been received in the office of the Director of Posts and may be secured upon request of the addressee:

Coley, John
Cross, William P.
Errington, Mrs. A. C.
Ferdinand, Miss Marie (3rd class)
Higley, Charles
Holder, Norel Hoda
Hurt, W. F.
James, Mrs. Clara (pkg.)
Jenkins, J. B.
John, Florence (3d class)
Kellner, Miss C.
Maloy, Dr. E. S.
Milford, J. D.
O'Berle, Mrs. R. B.
Pettys, Mrs. William N.
Russell, Wm. G. (3d class).
Scholder, Mrs. H.
Solomon, S.
Templeton, H. L.

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal, Colon and Balboa, during the week ending April 1, 1911:

Stanley Dollar, March 27, St. Helens, Ore.; with 462,570 feet, B. M., Douglas fir lumber for stock.

Prinz Sigismund, March 27, from New York, with 133 cases electric fuzes for stock.

Mathilda, March 28, from Tacoma, with 493,771 feet, B. M., Oregon pine lumber for stock.

City of Para, March 28, from San Francisco, with 10,002 feet, B. M., sugar pine lumber for stock.

Allianca, March 30, from New York, with 20 cases drugs and sundries for Sanitary Department; 12 cases tubing for Mechanical Division; 2 cases ball joints for Pacific Division; 25 cargo trucks, 25 bundles cork life preservers, 13 cases printing paper, 50 cases water coolers, 50 pieces switches for stock; and a miscellaneous cargo, the whole consisting of 185 packages, weighing 53 tons.

Abangare , March 30, from New Orleans, with 13,854 feet, B. M., creosoted lumber for Atlantic Division, 13,860 feet, B. M., yellow pine lumber, 390 bales alfalfa hay, 249 sacks cotton seed meal for stock.

Metapan, March 31, from New York, with 50 coils manila rope, 25 bundles brooms, for stock.

Ancon, March 31, from New York, with 22,595 barrels cement for Atlantic Division; 94,160 bags cement for Pacific Division.

Banes, March 31, from Bridgeton, N. J.; with 18,000 cases dynamite for stock.

The following vessels arrived at or departed from the port of Balboa during the week ending April 1, 1911:

Arrivals—March 26, *Yorktown*, from Central American ports; *Stanley Dollar*, from San Francisco; March 27, *Mantoro*, from Callao; March 28, *City of Para*, from San Francisco; *Mathilda*, from San Francisco; *Pectan*, from San Francisco; March 29, *Loa*, from Valparaiso; March 30, *Manavi*, from Guayaquil; March 31, *San Juan*, from San Francisco; April 1, *Santa Maria*, from San Francisco.

Departures—March 25, *Vicksburg*, to Central American ports; March 27, *Chile*, to Valparaiso; *Arica*, to Guayaquil; March 28, *Rupanco*, to Guayaquil; March 29, *Acapulco*, to San Francisco.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Advance	P. R. R.	Thursday	April 6
Panama	P. R. R.	Wednesday	April 12
Cristobal	P. R. R.	Tuesday	April 18
Ancon	P. R. R.	Monday	April 24
Allianca	P. R. R.	Saturday	April 29
Colon	P. R. R.	Saturday	May 6
Advance	P. R. R.	Friday	May 12
Panama	P. R. R.	Thursday	May 18
Allianca	P. R. R.	Wednesday	May 24
Colon	P. R. R.	Wednesday	May 31
Advance	P. R. R.	Tuesday	June 6
Panama	P. R. R.	Monday	June 12
Allianca	P. R. R.	Saturday	June 17
Colon	P. R. R.	Saturday	June 24
Advance	P. R. R.	Friday	June 30

CRISTOBAL TO NEW YORK.

Allianca	P. R. R.	Thursday	April 6
Colon	P. R. R.	Wednesday	April 12
Advance	P. R. R.	Tuesday	April 18
Panama	P. R. R.	Tuesday	April 25
Cristobal	P. R. R.	Tuesday	May 2
Ancon	P. R. R.	Monday	May 8
Allianca	P. R. R.	Friday	May 12
Colon	P. R. R.	Thursday	May 18
Advance	P. R. R.	Wednesday	May 24
Panama	P. R. R.	Wednesday	May 31
Allianca	P. R. R.	Tuesday	June 6
Colon	P. R. R.	Tuesday	June 13
Advance	P. R. R.	Sunday	June 18
Panama	P. R. R.	Saturday	June 24
Allianca	P. R. R.	Friday	June 30
Colon	P. R. R.	Thursday	July 6
Advance	P. R. R.	Wednesday	July 12

NEW YORK TO COLON.

Almirante	U. F. C.	Thursday	April 6
Prinz Aug. Wilhelm*	H.-A.	Saturday	April 8
Santa Marta	U. F. C.	Thursday	April 13
Prinz Sigismund	H.-A.	Friday	April 14
Magdalena	R. M.	Saturday	April 15
Metapan	U. F. C.	Thursday	April 20
Prinz Joachim*	H.-A.	Saturday	April 22
Zacapa	U. F. C.	Thursday	April 27
Prinz Eitel Friedrich	H.-A.	Friday	April 28
Clyde	R. M.	Saturday	April 29
Almirante	U. F. C.	Thursday	May 4

COLON TO NEW YORK.

Metapan	U. F. C.	Thursday	April 6
Prinz Joachim*	H.-A.	Tuesday	April 11
Zacapa	U. F. C.	Thursday	April 13
Prinz Eitel Friedrich	H.-A.	Tuesday	April 18
Clyde	R. M.	Tuesday	April 18
Almirante	U. F. C.	Thursday	April 20
Prinz Aug. Wilhelm*	H.-A.	Tuesday	April 25
Santa Marta	U. F. C.	Thursday	April 27
Prinz Sigismund	H.-A.	Tuesday	May 2
Thames	R. M.	Tuesday	May 2
Metapan	U. F. C.	Thursday	May 4

NEW ORLEANS TO COLON.

Atenas	U. F. C.	Saturday	April 1
Cartago	U. F. C.	Wednesday	April 5
Turrialba	U. F. C.	Saturday	April 8
Parismina	U. F. C.	Wednesday	April 12
Abangarez	U. F. C.	Saturday	April 15

COLON TO NEW ORLEANS.

Turrialba	U. F. C.	Thursday	Mar. 30
Parismina†	U. F. C.	Thursday	Mar. 30
Abangarez	U. F. C.	Thursday	April 6
Heredia†	U. F. C.	Thursday	April 6
Atenas	U. F. C.	Thursday	April 13
Cartago†	U. F. C.	Thursday	April 13
Turrialba	U. F. C.	Thursday	April 20
Parismina†	U. F. C.	Thursday	April 20

COLON TO BARBADOS, CALLING AT TRINIDAD.

Oruba	R. M.	Tuesday	April 11
Magdalena	R. M.	Tuesday	April 25

Hamburg-American steamers leave Colon for New York via Kingston every Tuesday at 10 a. m., and those designated (*) call at Santiago, Cuba; for Bocas del Toro and Port Limon on alternate Wednesdays, by ships designated (*).

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships designated (†) for New Orleans via Port Limon and Puerto Barrios on Thursday at 4 p. m.; ships for New York via Kingston on Thursday at 11 a. m.

The Leyland Line ship *Californian* will sail from Colon for New Orleans via Port Limon on April 21.

CANAL RECORD

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The Canal Record

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Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Colon Breakwater.

The high tides in Limon Bay during the dry season have interfered somewhat with the construction of the Colon breakwater, although it has not been necessary to suspend operations at any time. Piles for the trestles from which rock is dumped are towed out to the end of the trestle and there lifted from the water to the pile driver, and this part of the work has been rendered difficult by the heavy seas. At times men working on the outer end of the trestle have been forced to suspend operations entirely, and on one day recently six men were washed off by heavy waves. This emergency had been anticipated, however, and the men were immediately rescued. From this time on the bay will be more calm, and this part of the work will advance with less difficulty. The end of the trestle on March 1 was 3,598 feet from the shore line.

The 20-yard steel dump cars assigned to the breakwater work have not stood up well under the dumping of heavy rock required for the jetty, and on this account some of them have been transferred to the Central Division in exchange for 20 wooden flat cars to be used with a Lidgerwood unloader. One unloading machine and two plows accompany these cars, and the equipment in service will consist of 20 flats and 23 steel dump cars serving two steamshovels. In March 42,192 cubic yards of rock were quarried and dumped, and 50,105 cubic yards of rock dredged from the Canal prism were also dumped on the breakwater. With the heavier equipment it is believed that better results will be obtained each month.

Canal Work in March.

The grand total of Canal excavation to April 1 was 135,089,432 cubic yards, leaving to be excavated 47,448,334 cubic yards.

The total for March was 3,327,443 cubic yards, as compared with 3,067,479 cubic yards in March, 1910, and 3,880,337 cubic yards in March, 1909. Of the total, 3,259,996 cubic yards were "work excavation," and 67,447 cubic yards were "plant excavation." The dry excavation amounted to 2,210,788 cubic yards and was principally by steam shovels. The dredges removed 996,838 cubic yards and 109,668 cubic yards were sluiced, in addition to the amount pumped into Gatun Dam by suction dredges. The progress on the locks at Gatun, Pedro Miguel, and Miraflores is referred to elsewhere in this issue.

In the Atlantic Division, the total excavation was 543,938 cubic yards. Of this total, 104,878 cubic yards were dry excavation, and the remainder was removed by the dredges in the Atlantic entrance.

The total excavation in the Central Division was 2,032,523 cubic yards, of which 2,012,469 yards were from the prism, the best record for any month in the Canal history.

In the Pacific Division, the total excavation was 750,982 cubic yards, 557,778 cubic yards of which were taken out by the dredges at the Pacific entrance.

A detailed statement of the excavation, and a summary of the work on the locks and dams, follow:

ATLANTIC DIVISION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation
Dry excavation—	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*
Locks, Dam and Spillway	51,431	....	51,431
Mindi	49,734	3,713	53,447
Total	101,165	3,713	104,878
Wet excavation—			
Atlantic entrance	391,736	47,324	439,060
Locks, Dam and Spillway	....	....	....
Total	391,736	47,324	439,060
Total wet and dry excavation	492,901	51,037	543,938

CENTRAL DIVISION.

Dry excavation—			
Culebra Cut	1,715,130	840	1,715,970
Chagres section	279,628	5,596	285,224
Obispo Diversion	13,618	....	13,618
Wet excavation—			
Chagres section	17,711	....	17,711
Total	2,026,087	6,436	2,032,523

PACIFIC DIVISION.

Dry excavation—			
Locks, Dams and Spillways	73,413	....	73,413
Diversions	....	....	....
Prism, south of Pedro Miguel Locks	27,834	....	27,834
Total	101,247	....	101,247
Wet excavation—			
Pacific entrance	639,761	9,974	649,735
Miraflores Locks	....	....	....
Diversions	....	....	....
Total	639,761	9,974	649,735
Total wet and dry excavation	741,008	9,974	750,982

TOTAL CANAL EXCAVATION.

Dry excavation	2,210,788	10,149	2,220,937
Wet excavation	1,049,208	57,298	1,106,506
Total	3,259,996	67,447	3,327,443

Mean rainfall along Canal (twelve stations) 0.54 inches.

By "Work" Excavation is meant excavation actually made for one of the constituent parts of the Canal, such as Prism, Diversions, or Locks etc.; that is, it represents material taken from the area to be occupied by the Canal, and constitutes excavation useful for the completed Canal.

By "Plant" Excavation is meant excavation outside of any of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc. It includes material necessary to be excavated for construction purposes only and is chargeable against the particular plant item for which it is performed, such as Prism, Diversions, Locks, etc.

DAM AND LOCK CONSTRUCTION.

MATERIAL.	Atlantic.	Pacific.	Total.
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*
Concrete laid in locks.	86,884	75,889	162,773
Concrete laid in dams and spillways	8,704	....	8,704
Fill placed in dams	597,847	49,071	646,918

High Tide at Pacific Entrance.

High tide in the Pacific entrance to the Canal on April 1, broke through the dam across the Rio Grande at Corozal, and since then the hydraulic excavating plant at Miraflores locks has not been able to run during extreme low water. The dam was thrown across the river to impound water at high tide so that the hydraulic excavating plant could continue work at all stages of the tide. The high water of April 1 made a gap about 100 feet wide, and a trestle is now being driven in order that a rock fill may be made and the dam may thus be restored. The same high water in the Pacific threatened to wash out the dam across the mouth of the Corundu River at Balboa, behind which caissons for the cement dock are being sunk. By prompt measures taken to strengthen this dyke a washout was averted.

Machinery for Operating Gate Valves.

Awards have been authorized for sample machines to be used in operating the Stoney gate valves, which will control the water in the main culverts of the locks, and to operate the cylindrical valves, which will control the water in the lateral culverts. These machines will be tested on the Isthmus under conditions approximating those of actual use, and upon the results of the tests the contracts for the whole quantity, costing about $905,000 will be made.

Tenders for this machinery under a previous advertisement were opened on September 16, 1910, but the bids for the principal items were so high that no award was made. At the price then offered, the material now to be furnished would cost more than $1,400-000. New bids were requested to be opened on February 25, and the attention of foreign manufacturers was invited to the advertisement. Twenty-two bids were received on the second advertisement as compared with seven on the first, and the difference in the prices offered represents a saving of about $500,000. The lowest bid received for one item was from a European manufacturer, and an order may be placed with him. One of

NOTES OF PROGRESS.

(Continued.)

the awards provides for the use of foreign made tubes for the valve stems, the price asked for domestic material being deemed exorbitant.

The awards authorized, are as follows:

Two Stoney gate valve machines and two cylindrical valve machines complete, except motor and limit switch, with hot rolled thrust screws and Mannesmann (foreign) screws for valve stems, to Wheeling Mold and Foundry Company. The total number of machines to be purchased under this contract is 114 Stoney gate machines and 118 cylindrical valve machines, provided the test machines prove satisfactory.

Two motors for Stoney gate valve machines; two sample motors to be purchased from each of the following bidders: Allis-Chalmers Company, Westinghouse Electrical and Manufacturing Company, General Electric Company, two from the General Electric Company on an alternative bid, and two from the Allmanna Svenska Elektriska Aktiebolaget, the last award being conditional. Total number of motors to be purchased after test, 114.

Two motors for cylindrical valve machines; two sample motors to be purchased as in preceding paragraph. Total number of motors to be purchased under this contract after test, 118.

Two limit switches for Stoney gate valve machines and two for cylindrical valve machines to be purchased from each of the following bidders: Cutler Hammer Manufacturing Company, Westinghouse Electrical and Manufacturing Company, General Electric Company, and two from the Allmanna Svenska Elektriska Aktiebolaget, the last award being conditional. The total number of limit switches to be purchased under this contract is 114 for Stoney gate valve machines, and 118 for cylindrical valve machines, the award of the contract to be let after the machines have been tested.

Unloading in Central Division.

A statement of Lidgerwood cars unloaded in the Central Division during the month of March, follows:

Location.	No. of unloaders.	No. of trains.	No. of cars.
Balboa	3	1,148	22,960
Miraflores	3	796	15,920
Gamboa	4	1,292	27,147
Total	10	3,236	66,027

Dredging at Atlantic Entrance.

In the dredging at the Atlantic entrance the rock excavation in the eastern half of the ledge farthest from the shore line has been completed. This contained 312,856 cubic yards, and the dredges have been working on it since July 1908. This amount has been handled by the following dredges:

	Cu. Yds.
Ladder dredge *No. 1*	16,366
Ladder dredge *No. 5*	73,830
Ladder dredge *No. 6*	137,890
Dipper derdge *Chagres*	18,038
Dipper dredge *Mindi*	66,732
Total	312,856

The rock excavation from this time forward in the eastern half of the canal will be from a point three and one-half miles inland from deep water. The seagoing suction dredge *Caribbean* is now attacking the earth in the channel adjacent to that part of the rock excavation just completed, as well as the reach from this rock shoal to next shoal landward to which the ladder dredge has been moved.

A small office building has been authorized at the Panama railroad terminal in Balboa for the use of the California-Atlantic Steamship Company.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Over 60 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of work on April 8, being 1,254,159 cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending April 8, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers.	Concrete placed.	Hours worked.	No. of mixers.		
	Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
April 3	2,196	35:08	6	500	8:40	2	167¾	2,863¾
April 4	1,496	26:45	6	616	8:40	2	174¾	2,286¾
April 5	1,868	32:12	4	336	7:40	2	159¼	2,363¼
April 6	2,122	34:58	6	376	7:40	2	247	2,745
April 7	1,728	29:30	4	332	7:40	2	139	2,199
April 8	1,916	36:32	6	516	8:40	2	124½	2,556½
*Portable mixers				393½				393½
Total	11,326	195:05	5.33	3,069½	49:00	2	1,012¼	15,407¾
Previously reported								1,238,751¼
Grand total								1,254,159

*The 393½ yards shown for the portable mixers are reinforced concrete, and were placed on the following days: April 3d, 62 yards; April 4th, 45 yards; April 5th, 38 yards; April 6th, 82½ yards; April 7yh, 57 yards; April 8th, 109 yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is over 73 per cent completed, 614,926 cubic yards, out of a total of 837,400, having been placed at the close of work on April 8. The record for each of the six 8-hour working days of last week, follows:

Date.	Construction Plant. 2-Cubic yard mixers			Auxiliary Plant.						Large stone.	Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete Placed.	Hours worked	No. of mixers		
	Cu. Yds.			Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
April 3	914	14:00	2	476	10:00	2	165	10:00	2		1,555
April 4	704	12:00	2	504	14:00	3	290	11:50	2		1,408
April 5	724	12:00	2	410	14:00	3	204	13:25	2		1,338
April 6	712	12:00	2	462	10:00	2	159	12:25	2		1,333
April 7	768	12:00	2	520	12:00	2	159	12:25	2		1,447
April 8	560	6:00	2	620	13:50	2	153	10:00	2		1,333
Total	4,382	68:00	2	2,992	73:50	2.33	1,040	69:25	2		8,414
Previously reported										4,179	606,512
Grand total										4,179	614,926

MIRAFLORES LOCKS.

About 14 per cent of the concrete for the system of two twin locks at Miraflores was in place on April 8, the total amount on that date being 183,520 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant.							Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
April 3	160	4:00	2	272	5:50	2	845	49:50	6		1,393
April 4	244	5:50	2	336	6:50	2	830	47:00	7		1,520
April 5	252	6:50	2	376	6:50	2	857	49:00	6		1,596
April 6	340	15:50	2	368	6:00	2	851	45:75	7		1,621
April 7	294	11.50	4	372	6:00	2	902	51:50	7		1,568
April 8	536	12:00	4	232	4:50	2	883	53:50	7		1,656
							*404	31:00	.67		
Total	1,826	55:00	2.67	1,956	35:00	2	5,572	328:45	5.81		9,354
Previously reported										3,693	174,166
Grand total										3,693	183,520

*This 404 yards was mixed by a ½-yard mixer, the amounts for each day being: April 3d, 116 yards; April 4th 110 yards; April 5th, 111 yards; April 6th, 67 yards.

STEAM SHOVEL RECORDS.

Central Division Work in March.

During the month of March the total amount of material excavated in the Central Division was 2,032,523 cubic yards, of which 542,991 cubic yards were classified as earth, and 1,489,532 cubic yards as rock.

Of this quantity, 1,961,204 cubic yards were removed by steamshovels, 8,508 cubic yards by scraper, 28,185 cubic yards by bucket cranes, and 9,170 cubic yards by hand. Contractors removed 17,711 cubic yards by sluicing and 7,745 cubic yards by hand.

The high record for the month was made by shovel No. 223, working 27 days in the Culebra district, which excavated 65,559 cubic yards of rock. The second best record for the month was made by shovel No. 208, working 27 days in the Culebra district, which excavated 62,003 cubic yards of rock and earth.

The best record for a shovel of the 70-ton class was made by shovel No. 124, working 27 days in the Culebra district, which excavated 37,420 cubic yards of rock and earth.

Shovel No. 253, working in the Empire district, made a high record for one day by excavating 3,116 cubic yards of rock on March 28. Shovel No. 128, working in the Chagres district, excavated 2,130 cubic yards of earth on March 24, the high record for one day for a shovel of the 70-ton class, during the month.

Except where noted, monthly reports are computed by place measurement, while the daily reports are based on car measurement. The best records for the month and for one day are shown below:

BEST RECORDS FOR THE MONTH.

Shovel No.	Cubic Yards.			No. of days at work.
	Earth.	Rock.	Total.	
CHAGRES DISTRICT.				
126*	35,030	....	35,030	26
115*	32,296	....	32,296	27
EMPIRE DISTRICT.				
226	....	51,160	51,160	27
263	....	50,992	50,992	27
253	....	46,984	46,984	27
CULEBRA DISTRICT.				
223	....	65,559	65,559	27
208	37,731	24,272	62,003	27
212	....	52,773	52,773	26
PEDRO MIGUEL.				
231	....	41,567	41,567	27

BEST RECORDS FOR ONE DAY.

Shovel.	Location.	Date.	Character of material excavated.	Cubic yards.
128	Chagres*	Mar. 24	Earth	2,130
111	Chagres*	Mar. 10	Earth	2,020
115	Chagres*	Mar. 17	Earth	1,920
253	Empire	Mar. 28	Earth	3,116
253	Empire	Mar. 29	Rock and earth	2,850
226	Empire	Mar. 7	Earth	2,793
256	Culebra	Mar. 14	Rock	3,059
256	Culebra	Mar. 3	Rock	3,021
256	Culebra	Mar. 2	Rock	2,869
227	Culebra	Mar. 7	Rock	2,831
208	Culebra	Mar. 14	Rock	2,730
231	Pedro Miguel.	Mar. 29	Rock	2,793
231	Pedro Miguel.	Mar. 30	Rock	2,356
231	Pedro Miguel.	Mar. 20	Rock	2,166

*70-ton shovels. Others 95 and 103-ton shovels.

Steamshovels on P. R. R. Relocation.

For the month of March, the total excavation on the relocation of the Panama railroad was 408,180 cubic yards, of which 134,429 were earth and 273,751 cubic yards were rock. On the Gatun-Monte Lirio section 273,475 cubic yards were taken out by steamshovels and 400 cubic yards by hand. On the Gold Hill section, 51,820 cubic yards were removed by steamshovels, 61,688 cubic yards by pan car task work, 4,667 cubic yards by hand for culverts, and 16,130 cubic yards by contract, a total of 134,305 cubic yards.

The best steamshovel record was made by steamshovel No. 257, on the Gatun section, which removed 5,400 cubic yards of earth and 64,200 cubic yards of rock, a total of 69,600 cubic yards from main line cuts in 27 working days.

The best 70-ton record was made by steamshovel No. 117, working near Camp Totten, which excavated 48,160 cubic yards of rock in 27 working days.

The high record for one day for 5-yard shovels was made by steamshovel No. 257 which excavated 3,240 cubic yards of rock on March 24.

The high record for a shovel with 3-yard dipper was made by steamshovel No. 105, which excavated 2,300 cubic yards of earth and rock on March 27.

'BEST RECORDS FOR THE MONTH.

Shovel No.	Cubic Yards by Cross Section.			
	Days worked.	Eartb	Rock.	Total.
257	27	5,400	64,200	69,600
262	27	15,775	36,525	52,300
117	27	....	48,160	48,160

Total ouput during month of March, 1911, 325,295 cubic yards.

Total number of steamshovel working days, 190.

Average output per working day, 1,712 cubic yards.

Gatun Dam Spillway.

The concrete work in the spillway of Gatun Dam is over 52 per cent completed, 131,624 cubic yards out of a total of 250,000 having been placed up to the close of work on April 8. A statement of the amount laid each day last week and of the total in place, follows:

Date.	Concrete Laid.	Hours worked.	No. Mixers.
	Cu. Yds.		
April 3	288	15:00	2
April 4	214	14:00	2
April 5	234	16:00	2
April 6	240	15:00	2
April 7	220	16:00	2
April 8	244	15:30	2
Total	1,440	91:30	2
Previously reported	130,184		
Grand total	131,624		

Porto Bello Crusher.

A statement of the work done at the Porto Bello crusher, by days, for the week ended April 8, follows:

Date.	Hours worked.	Cubic Yards.
April 3	6:30	2,928
April 4	7:10	3,487
April 5	7:15	3,726
April 6	6:55	3,331
April 7	7:20	3,529
April 8	6:48	2,996
Total	41:58	19,997

Atlantic Division Sand and Rock Service.

The sand dredged from the beds at Nombre de Dios and shipped to Gatun for use in the locks and spillway concrete, amounted to 48,292 cubic yards in March. This is the greatest output for one month from the Nombre de Dios pits. The amount of rock quarried and crushed at Porto Bello in March was also the greatest monthly output, 87,109 cubic yards. The plant worked eight hours a day throughout the month, and the greatest daily output was that of March 15 when 3,737 cubic yards were sent to Gatun.

Ancon Quarry.

A statement of the rock crushed at Ancon quarry during the week ended April 8, 1911, follows:

Date.	Hours worked.	Cubic Yards.
April 3	4:25	1,824
April 4	1:40	979
April 5	6:15	1,609
April 6	8:20	2,588
April 7	8:45	2,778
April 8	7:25	2,560
Total	36:50	12,356

Obituary.

A cable message from the States under date of April 8, announces the death of William B. Corse, resident engineer at Corozal in the Pacific Division. He was granted leave of absence on account of illness on March 23. He was born in Alexandria, Va., 43 years ago, and came to the Isthmus on January 4, 1910. He is survived by his wife, a daughter, and a brother whose home is in Lexington, Va.

I. B. of S. S. and D. M.

The International Brotherhood of Steam Shovel and Dredge Men will hold its regular meeting on Sunday, April 16, at the I. C. C. lodge hall, Empire, at 12.15 p. m. It is very important that all brotherhood men attend this meeting.

WALTER P. TUDOR, *Secretary and Treasurer*
Empire, April 7, 1911.

Work of the Chinese Red Cross.

Improvements to the Chinese section in Mount Hope cemetery are being made by the Chinese chapter of the Red Cross. The section is situated directly east of the main entrance adjoining the Jewish section, and covers about one acre of ground. The lot is being enclosed by a concrete wall three feet high and about eight inches thick. The back of this wall will be decorated with symbolic designs and memorial inscriptions, and the space along the top will be reserved for flowers, urns, and other memorials. The entrance will be an arched gateway nine feet six inches high and six feet wide. The representatives of the Red Cross have located the bodies of several of their countrymen who were buried in the old cemetery prior to American occupation, and have removed them to the new section. Under this society it has been the custom of the Chinese to exhume the bones of their dead who have families in China and ship them home for reinterment. This was done in 1908 and 1910, fifty bodies having thus been shipped. About 80 will remain in the cemetery. The improvements will cost $2,500.

Among the 2,000 Chinese in the Republic and in the Canal Zone, 150 are active members of the Red Cross, and several hundred are associate members, paying a subscription every three years. The chapter recently forwarded $800 to the headquarters in Shanghai for the famine sufferers.

Murder at Bohio.

At a dance near Bohio on the night of April 10, Andres Oraso stabbed and killed Doceibe Rodriguez. Oraso is in jail.

RECORD OF CANAL WORK SINCE AMERICAN OCCUPATION.

MONTHLY TOTALS BY CUBIC YARDS OF EXCAVATION AND LOCK AND DAM CONSTRUCTION.

[All figures are of work useful for the completed Canal.]

DRY EXCAVATION.

CENTRAL DIVISION.

Months.	Culebra Section.*								Chagres Section.**				
	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
January	....	70,650	120,990	566,750	1,227,022	1,150,249	1,323,693	1,356,394	....	169,447	389,399	175,802	255,385
February	....	75,200	168,410	639,112	1,248,265	1,194,454	1,259,173	1,409,338	....	200,145	450,182	286,309	219,550
March	....	132,840	239,178	815,270	1,290,885	1,434,597	1,509,728	1,728,748	....	324,233	619,491	484,846	297,339
April	....	126,749	213,177	879,527	1,242,574	1,272,746	1,288,845	....	....	329,483	510,020	428,777	....
May	27,556	75,935	196,209	690,365	960,840	1,126,963	1,099,279	....	....	235,902	386,170	248,974	....
June	32,551	76,905	212,623	624,586	1,134,032	1,242,134	1,305,141	....	....	322,145	275,900	164,389	....
July	31,599	78,570	159,789	770,570	1,121,325	1,200,828	1,153,810	....	....	345,757	233,897	166,106	....
August	35,056	49,210	244,823	786,866	1,171,927	1,173,370	1,377,711	....	2,900	368,683	231,543	234,404	....
September	25,220	44,085	291,452	753,468	1,122,860	1,235,978	1,339,948	....	21,546	346,948	235,818	234,290	....
October	19,695	52,940	327,009	834,499	1,160,101	1,302,901	1,320,314	....	25,627	424,911	221,409	271,409	....
November	28,860	60,540	221,642	790,632	1,022,576	1,070,792	1,209,554	....	44,044	336,390	93,619	260,882	....
December	42,935	70,630	307,689	1,025,485	1,210,046	1,152,022	1,211,400	....	98,652	383,948	105,044	197,481	....
Totals.	243,472	914,254	2,702,991	9,177,130	13,912,453	14,557,034	15,398,599	4,494,480	192,769	3,787,992	3,752,492	3,153,669	772,274

Months.	Atlantic Division.						Pacific Division.							
	Colon (Mindi)†		Gatun Locks, Dam and Spillway.††				Pedro Miguel Locks.‡				Miraflores Locks, Dams And Spillway.‡‡			
	1909.	1911.	1908.	1909.	1910.	1911.	1908.	1909.	1910.	1911.	1908.	1909.	1910.	1911.
January	45,664	....	292,155	102,690	125,011	65,889	....	83,726	27,320	15,690	7,203	61,202	31,479	48,744
February	46,046	47,102	282,797	95,031	123,738	50,511	....	58,242	9,486	6,809	39,016	53,689	15,300	12,936
March	70,713	49,734	374,598	90,051	132,007	51,431	....	95,624	6,784	674	73,194	51,417	18,184	72,739
April	74,368	....	373,456	70,009	103,243	....	....	101,365	9,129	....	98,943	60,060	12,148	....
May	71,407	....	266,747	52,786	82,958	....	....	57,523	10,405	....	73,023	47,588	20,250	....
June	80,101	....	244,951	36,556	88,088	....	13,228	70,971	8,420	....	68,691	55,653	21,994	....
July	82,378	....	213,359	39,058	95,503	....	22,648	77,503	4,410	....	104,369	50,999	11,990	....
August	66,249	....	188,262	40,346	99,737	....	22,217	58,025	12,789	....	94,248	35,446	17,548	....
September	61,437	....	145,990	49,945	103,040	....	28,833	48,825	10,405	....	90,923	31,803	8,590	....
October	72,643	....	154,064	57,321	118,327	....	48,875	39,002	7,433	....	74,700	25,349	9,850	....
November	42,009	....	118,278	63,452	94,552	....	55,401	20,207	10,636	....	52,930	18,644	9,400	....
December	....	....	119,904	96,590	72,030	....	65,578	28,342	11,195	....	69,650	20,083	17,906	....
Totals	713,015	96,836	2,774,561	793,835	1,238,234	167 831	256,780	739,355	128,412	23,173	846,920	511,933	194,639	134,419

*Total to April 1, 1911, 61,400,413 cubic yards.

**Total to April 1, 1911, 11,659,196 cubic yards, of which 58,619 cubic yards were removed by sluicing.

†Total to April 1, 1911, 1,573,657 cubic yards; in this total are included 172,851 cubic yards removed in 1907, and 590,955 cubic yards removed in 1908.

††Total to April 1, 1911, 6,341,268 cubic yards; in this total are included 26,628 cubic yards excavated October to December, 1906, and 1,340,179 ubic yards in 1907; there were also 38,425 cubic yards removed by dredges at Gatun Dam site in 1907.

‡Total to April 1, 1911, 1,147,720 cubic yards.

‡‡Total to April 1, 1911, 1,687,911 cubic yards; there were also 78,233 cubic yards excavated at Balboa locks and dams in 1907; and 282,996 cubic yards at different points in prism to April 1, 1911.

WET EXCAVATION.

M'ths.	Atlantic Division.							Pacific Division.								
	Atlantic Entrance.§					Gatun Locks †		Pacific Entrance.§§							Miraflores Locks.§§§	
	1907.	1908.	1909.	1910.	1911.	1908.	1909.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1910.	1911
Jan	111,100	490,701	521,050	510,055	520,181	....	97,043	....	95,940	94,710	460,250	469,529	518,936	379,810	....	89,24
Feb	110,002	427,722	444,910	493,448	455,318	....	132,291	....	95,940	93,480	663,519	671,477	285,791	386,866	....	87,33
March	84,145	546,886	461,208	412,325	391,736	....	141,838	....	116,820	92,319	783,281	865,696	462,588	639,761	....	....
April	69,889	496,366	470,635	190,574	....	....	17,938	....	110,700	104,855	676,539	731,767	534,322	....	....	....
May	133,847	564,386	315,370	447,578	....	....	52,011	....	112,340	122,157	530,466	720,753	484,509	....	....	....
June	124,118	572,749	182,575	458,021	....	....	38,829	50,676	62,697	133,575	656,621	544,685	475,486	....	....	....
July	109,922	625,497	348,451	423,092	....	....	....	41,533	98,400	108,338	696,170	733,181	515,782	....	....	....
August	194,297	638,217	422,846	508,829	....	....	....	54,530	111,930	168,284	737,774	623,263	506,969	....	....	....
Sept	403,842	624,776	410,574	451,373	....	....	....	114,308	105,780	153,975	750,080	662,976	473,585	....	....	....
Oct	415,120	505,260	314,778	549,788	....	....	....	[illegible]	97,170	357,122	762,276	720,920	467,873	....	40,000	....
Nov	422,797	570,832	457,889	600,708	....	....	....	71,17	92,988	365,423	609,089	627,791	425,370	....	47,444	....
Dec	442,835	679,604	489,121	482,370	....	8,583	....	71,09	90,528	349,551	729,960	727,460	387,034	....	68,681	....
Totals	2,621,914	6,742,996	4,839,407	5,528,661	1,367,235	8,583	479,950	485,153	1,191,233	2,143,789	8,056,025	8,399,498	5,538,745	1,406,437	156,125	176 57

§Total to April 1, 1911, 22,527,678 cubic yards; in this total are included 399,820 cubic yards excavated in 1905, and 1,027,645 cubic yards in 1906.

§§Total to April 1, 1911, 27,220,880 cubic yards; there were also 172 cubic yards removed by steam shovels during October, 1908. Of this amount, 91,957 was removed by "monitors" in March, 1911.

§§§Total to April 1, 1911, 642,350 cubic yards; in this total are included 309,647 cubic yards excavated in 1909.

†Total to April 1, 1911, 488,533 cubic yards.

CONCRETE IN LOCKS AND DAMS.

Months.	Gatun Locks.			Pedro Miguel Locks.			Miraflores Locks.		
	1909.	1910.	1911.	1909.	1910.	1911.	1909.	1910.	1911.
Jan	......	54,136	72,919	......	16,273	38,513	......	......	24,018
Feb	......	55,696	72,103	......	13,218	37,011	......	146	20,896
March	......	60,998	86,884	......	18,793	44,716	......	314	31,173
April	......	63,227	......	......	24,522	......	......	13	......
May	......	74,273	......	......	29,576	......	......	27	......
June	......	89,401	......	......	30,631	......	......	1,603	......
July	......	84,001	......	......	41,464	......	28	3,672	......
Aug	1,298	85,686	......	......	51,264	......	74	6,030	......
Sept	12,294	76,720	......	2,370	50,702	......	......	18,133	......
Oct	29,378	86,949	......	8,310	61,422	......	......	22,159	......
Nov	30,270	75,152	......	10,169	64,248	......	......	23,871	......
Dec	42,832	80,212	......	13,007	42,834	......	......	21,533	......
Total	116,072	886,451	231,906	33,856	444,947	120,240	102	97,501	76,087

From March 17, 1909, to April 1, 1911, there were placed in the Spillway of Gatun Dam 131,692 cubic yards of concrete, including 8,704 cubic yards placed in March, 1911; in Miraflores Dam there were placed 321 cubic yards up to April 1, 1911.

FILL PLACED IN DAMS.

M'ths.	Gatun.*				Pedro Miguel.†		Miraflores.‡			
	1910.		1911.		1910.	1911.	1910.		1911.	
	Wet.	Dry.	Wet.	Dry.	Dry.	Dry.	Wet.	Dry.	Wet.	Dry.
Jan	178,254	236,994	211,992	218,690	......	......	......	28,151	89,243	24,685
Feb	292,215	271,788	301,733	211,008	11,510	......	......	1,438	87,335	32,404
Mar	210,387	332,661	342,800	255,047	22,860	......	......	5,385	25,131	23,940
April	242,440	263,437	......	......	31,394	......	......	......	......	......
May	249,283	194,868	......	......	23,572	......	......	6,480	......	......
June	384,166	258,653	......	......	1,350	......	......	7,356	......	......
July	462,092	180,111	......	......	......	......	......	4,290	......	......
Aug	406,606	229,774	......	......	......	......	......	10,898	......	......
Sept	457,637	223,102	......	......	......	......	......	11,220	......	......
Oct	480,732	259,619	......	......	......	......	40,000	14,370	......	......
Nov	129,666	266,105	......	......	......	......	47,444	8,960	......	......
Dec	243,121	169,575	......	......	......	......	68,681	39,224	......	......
T'tal	3,736,599	2,886,687	856,525	684,745	90,686	......	156,125	137,772	201,709	81,029

*Dry fill begun in January, 1907, and 2,096,477 cubic yards of wet, and 3,241,418 cubic yards of dry fill were placed in 1907, 1908 and 1909.

†170,166 cubic yards placed in dams up to December, 1909, inclusive.

‡138,587 cubic yards of wet fill and 472,091 cubic yards of dry fill were placed in dams up to December, 1909.

CANAL EXCAVATION TO DATE.

By French Companies		78,146,960
French excavation useful to present Canal		29,908,000
By Americans—		
Dry excavation	84,112,947	
Dredges	50,976,485	
Total		135,089,432
May 4 to December 31, 1904	243,472	
January 1 to December 31, 1905	1,799,227	
January 1 to December 31, 1906	4,948,497	
January 1 to December 31, 1907	15,765,290	
January 1 to December 31, 1908	37,116,735	
January 1 to December 31, 1909	35,096,166	
January 1 to December 31, 1910	31,137,677	
January 1 to February 28, 1911	8,682,368	

TOTALS BY DIVISIONS AND AMOUNT TO BE EXCAVATED.

Divisions.	Amount excavated.		Remaining to be Excavated.	
Atlantic—				
Dry excavation	7,914,925	30,969,561	358,129	12,387,784
Dredges	23,054,636		12,029,665	
Central—				
Culebra Cut	61,400,413	73,059,609	22,786,311	24 065,409
All other points	11,659,196		1,279,098	
Pacific—				
Dry excavation	3,197,032	31,060,262	3,183,110	10,995,141
Dredges	27,863,230		7,812,031	
Grand totals		135,089,432		47,448,334

CANAL MEDAL LIST.

The following is a list of American employes of the Isthmian Canal Commission, who completed two years' service on the Isthmus during the twelve months ending December 31, 1910, and for that reason are entitled to receive the Canal Medal. The date shown opposite each name is that from which medal service is reckoned. The list is continued from the issue of April 5, 1911.

The list is now published in order that it may be carefully checked by those interested. Any omissions, errors in the spelling of names or in the dates from which medal service is reckoned, should be reported to the Office of the Chairman at Culebra, for correction.

In numbering the medals the relative standing of employes, whose medal service is reckoned from the same date, will be determined by lot. The list will be continued in the issue of April 26, 1911.

Name.	*Date.*
1908.	
David, Joseph	June 14
Gerlach, Frederic M	June 14
Lord, Charles G	June 14
Mitchell, George W	June 14
Naylor, Michael J	June 14
Penman, Charles W	June 14
Rosselot, Emma	June 14
Severn, Christopher J	June 14
Stanner, John T	June 14
Sullivan, Bernard	June 14
Vinton, Byron F	June 14
Hudtloff, Theador	June 15
Linne, George A	June 15
Mackey, James F	June 15
Doyle, Andrew	June 16
Frampton, Charles M	June 17
Shearer, Samuel G	June 17
Deavours, John C	June 18
Perkins, James L., Jr	June 18
Mooney, Thomas B	June 18
Allen, Sydney G	June 19
Byrnes, James N	June 19
Corbett, Malachy J	June 19
Folcey, Arthur E	June 19
Hoziea, Charles P	June 19
Kalbreyer, William	June 19
Mahony, Joseph	June 19
McGeachy, Alexander	June 19
Rosen, Morris	June 19
Sasse, Harry O	June 19
Story, Albert R	June 19
Strobel, Louis	June 19
Walter, John R	June 19
Muldoon, Albert C	June 20
Shoup, Vernon	June 20
Graham, John H	June 22
Kockler, Edwin	June 23
Kelleher, Morris I	June 24
Labat, John	June 24
Simons, Hugh A	June 24
Steuer, John C., Jr	June 24
Budgick, Frank	June 26
Kent, Lucien B	June 27
Wallen, Earl S	June 27
Abshire, David	June 30
Bartholomew, Annie M	June 30
Cucuel, Leo M	June 30
Devol, Carroll A	June 30
Flood, James J	June 30
Garvey, Joseph T	June 30
Johnson, Charles F	June 30
Pyne, David F	June 30
Sanders, Bruce G	June 30
Smith, Jesse T	June 30
Wilson, Eugene T	June 30
Fanger, Joseph	July 1
Gowan, William R., Jr	July 1
Mee, George H	July 2
Otty, George	July 2
Randolph, Joseph H	July 2
Slattery, Richard	July 2
Crary, Alexander P	July 6
Golden, John A	July 6
Groff, Albert D	July 6
Lego, Thomas E	July 6
Martin, Joseph	July 6
Pierce, Margaret	July 6
Tuttle, Mearl J	July 6
Walsh, Patrick F	July 6
Weiser, William M	July 6
Ansberry, James F	July 7
Carroll, Michael J	July 7
Francis, Judson W	July 7
Goddum, William	July 7
Motley, Thomas	July 7
Casanova, Toulme V	July 8
West, Charles S	July 8
Wilkins, John H	July 8
Behrends, Henry	July 9
Gray, John	July 9
Wagner, Jake	July 9
Crichton, James B	July 10
Coit, John J	July 11
Harkins, Hugh J	July 13
McClelland, Joseph Y	July 13
Severin, William	July 14
Hodges, Harry F	July 15
Knight, William O	July 15
Valentine, Amelia J	July 15
Walker, John A	July 15
Carson, Arthur	July 16
Carter, H. R., Jr	July 16
Childs, William M	July 16
Jaquish, George	July 16
Johnson, James S	July 16
Thatcher, Roland C	July 16
Webster, William	July 16
Hannah, Maude	July 17
Mullane, Dennis E	July 18
Bell, Ernest C	July 20
Brow, George	July 20
DeVerse, Byron T	July 20
Hooper, Lulu E	July 20
King, Campbell J	July 20
Matthews, Charles H	July 21
Mullane, Patrick	July 22
Barth, George H	July 23
Kotalik, John J	July 23
Snyder, Robert M	July 23
Hills, Fred C	July 24
Jervey, James P	July 24
Keller, Gustav W	July 24
Mann, C. H	July 24
Bliss, George H	July 25
Zeier, Andrew	July 28
Allen, George B	July 29
Anderson, Grant	July 29
Dugan, Mary J	July 29
Ferguson, Blanche K	July 29
Hern, John F	July 29
Johnston, Ida J	July 29
Louis, William U	July 29
McBride, Frank	July 29
McHenry, Paul M	July 29
McLean, I. William	July 29
Murphy, John J	July 29
Schofield, Benj. A	July 29
Shaffer, Melvin C	July 29
Skinner, Frank	July 29
Wilkins, John	July 29
Wilson, George M	July 29
Allen, Everett W	July 31
Dundas, Harry	Aug. 1
Lechler, Anthony J	Aug. 1
Mattimore, Joseph A	Aug. 1
Miller, Harvey H	Aug. 1
Polson, Thomas	Aug. 1
McCalley, Thomas S	Aug. 3
Moore, John J. C	Aug. 3
McCown, William H	Aug. 4
Morton, Brett A	Aug. 4
Piper, Edward L	Aug. 4
Pettit, John R	Aug. 4
Darrow, Samuel P	Aug. 5
Mitchell, Walter D	Aug. 5
Randall, Charley B	Aug. 7
Cuff, Martin R	Aug. 8
Cammack, Mahlon W	Aug. 10
Conner, John	Aug. 10
Fischer, Charles J	Aug. 10
Hunt, Ida S	Aug. 10
Kitchin, Andrew G	Aug. 10
Lammers, Ada M	Aug. 10
Peters, Claude	Aug. 10
Roberts, Thomas	Aug. 10
Sands, Fred W	Aug. 10
Weyler, Adolf	Aug. 10
Peters, Robert M	Aug. 11
Theyken, Charles F	Aug. 11
Garrison, Jules D	Aug. 12
Bealler, Archibald F	Aug. 41
Bryan, John P	Aug. 14
Greuling, John J	Aug. 14
Mellon, Robert	Aug. 14
Urch, Lillian M	Aug. 14
Bianchi, Elvezio	Aug. 15
Canfield, Floyd J	Aug. 15
Coyle, Francis B	Aug. 15
Potter, Charles	Aug. 15
Balling, Frank J	Aug. 17
Gage, Genevieve	Aug. 17
Hodges, Hugh F	Aug. 17
Louner, Edward	Aug. 17
Oman, Roy W	Aug. 17
Svenson, Martin T	Aug. 17
Brandt, Delvin W	Aug. 18
Cassell, John S	Aug. 18
Keppell, Marian J	Aug. 18
Marshall, Fred B	Aug. 18
McGrath, Fred S	Aug. 18
McMillan, William P	Aug. 18
Thompson, Robert C	Aug. 18
Bernsee, Christian D	Aug. 19
Gill, Fred A	Aug. 19
Modin, Harry	Aug. 19
Cooper, Victor W	Aug. 20
Dagley, Farrell H	Aug. 20
Butler, Margaret C	Aug. 21
Butler, Mary M	Aug. 21
Moore, Judson K	Aug. 21
Macey, Robert C	Aug. 22
Aitken, Samuel C	Aug. 23
Casey, Austin B	Aug. 23
Duncan, Arthur	Aug. 23
Hersom, Charles A	Aug. 23
Hutchins, Herbert A	Aug. 23
McIntyre, James J	Aug. 23
Carlson Charles	Aug. 24
Speicher, Harry E	Aug. 24
Waters, Thomas	Aug. 24
Taylor, S. B	Aug. 26
Hausser, Albert	Aug. 28
Cline, Robert L	Aug. 29
Massey, Parke D	Aug. 29
Pender, Katharine D	Aug. 29
Teall, Gilbert E	Aug. 29
Casey, Robert L	Sept. 1
Ferguson, Rance	Sept. 1
Grant, J. E	Sept. 1
Steptoe, Edward	Sept. 1
Falk, Leopold	Sept. 2
McFarland, John	Sept. 2
McHenry, William D	Sept. 2
Mellon, John J	Sept. 2
Nolan, William	Sept. 2
O'Neil, John J	Sept. 2
Quam, Marshall	Sept. 2
Wintler, Clarence H	Sept. 2
Yingling, George A	Sept. 2
Boyd, Allen S	Sept. 3
Dickson, Thomas H	Sept. 3
Hicks, Alvah Q	Sept. 3
Hawkins, Fred C	Sept. 4
Neville, Herbert C	Sept. 4
Hull, Robert H	Sept. 5
Wilke, James M	Sept. 5
Bryan, Joe	Sept. 8
Hammer, Hubert H	Sept. 8
Kent, Wiley F	Sept. 8
Lloyd, Howard M	Sept. 8
Meirowitz, Jacob	Sept. 8
Pincus, Alex. G., Jr	Sept. 8
Yeck, John H	Sept. 8
Browne, James A	Sept. 9
French, Robert V., Jr	Sept. 9
Bielaski, Frank B	Sept. 11
Carigan, William E	Sept. 11
Key, Frank M	Sept. 11
Meyer, Adolf, G	Sept. 11
Shearer, Harry W	Sept. 11
Owens, Edward	Sept. 12
Gomo, John	Sept. 14
Grant, Freeman	Sept. 14
Mannheim, Joseph	Sept. 14
Mayer, Frederick	Sept. 14
Saphir, Volanti	Sept. 14
Patterson, Michael F	Sept. 15
Swinehart, Robert	Sept. 15
Walling, Loring A	Sept. 15
Windsor, Richard S., Jr	Sept. 15
Jeffries, Joseph	Sept. 16
Deavours, Robert C	Sept. 17
Beyers, Robert	Sept. 18
Burbage, John	Sept. 18
Buschmann, Harry	Sept. 18
Cole, Harry O	Sept. 18
Covelski, Joseph P	Sept. 18
Nixon, Courtland	Sept. 18
Reichard, James H	Sept. 18
Evans, William C	Sept. 19
Baumer, Sevier S	Sept. 20
Clear, Thomas L	Sept. 21
Lipscomb, Brooks	Sept. 23
Reed, George T	Sept. 23
Brignac, George D	Sept. 24
Albert, James T	Sept. 27
Decker, James H	Sept. 27
Miller, Luther B	Sept. 27
Jordan, Francis E	Sept. 28
Swanson, Knute A	Sept. 29
Bliss, Gertrude	Oct. 1
Heim, George W	Oct. 1
Heller, Jessie J	Oct. 1
Keys, Ida	Oct. 1
Wilson, Jessie S	Oct. 1
Strickland, Frank H	Oct. 2
Drummond, Joel H	Oct. 4
Haussler, Ernest	Oct. 4
Korsan, Albert	Oct. 4
Reilley, Herbert J	Oct. 4
Stewart, James	Oct. 4
Cook, Richard R	Oct. 5
Cushing, John C	Oct. 5
Morgan, David S	Oct. 5
Weiser, Josef	Oct. 5
Burns, Blythe M	Oct. 7
Davies, Evan D	Oct. 7
Abendroth, William G	Oct. 8
Derrick, Clarence	Oct. 8
Fletcher, Cecil G	Oct. 8
Goldmark, Henry	Oct. 8
Hendricks, A. B	Oct. 8
Malcolm, James E	Oct. 8
Mason, Lewis A	Oct. 8
Shokoff, August	Oct. 8
Whitlock, F. O	Oct. 8
Roberts, Arthur J	Oct. 9
Flowers, J. L	Oct. 10
Jackson, Ephraim F	Oct. 10
Black, Charles A	Oct. 11
Scheitzer, William F	Oct. 11
Yunker, Ray E	Oct. 11
Clark, George	Oct. 12
Carcaud, Henry A	Oct. 13
Smith, Dwight W	Oct. 13
Hall, Matthew W	Oct. 14
Lee, Benson E	Oct. 14
McGrath, John T	Oct. 14
McKinney, Amos	Oct. 14
Baumis, Conrad	Oct. 16
Everett, G. Catlett	Oct. 16
Grace, John T	Oct. 16
Sasse, Frank P	Oct. 16
Williams, Thomas J	Oct. 16
Jones, Cuthbert C	Oct. 19
Mackenzie, Alexander	Oct. 19
McCray, Grace E	Oct. 19
Purscell, Thomas J	Oct. 19
Codrick, Edmond C	Oct. 20
Frederiksen, Fred'k P	Oct. 20
Grier, William	Oct. 20
Price, James K	Oct. 21
Aznoe, James L	Oct. 23
Fuchshuber, Christian	Oct. 23
Smith, Henderson C	Oct. 23
Tupper, E. W	Oct. 23
Dannenberg, Fred'k S	Oct. 24
Glazier, Herbert S	Oct. 24
Monroe, Peter J	Oct. 24
Morgan, Charles P	Oct. 26
Brewer, William W	Oct. 27
Wilkstrom, John	Oct. 27
Hilton, Albert C	Oct. 28
Olson, Edvart J	Oct. 28
Thompson, George	Oct. 28
Jordan, Thomas H	Oct. 29
Schultz, Albert E	Oct. 29
Wilmington, Howard	Oct. 30
Bath, Otto E	Nov. 1
Gray, William W	Nov. 1
Wintringham, Chas. H	Nov. 1
Carrollo, Faustino F	Nov. 2
Orr, William T	Nov. 2
Winbarg, Lou A	Nov. 2
Cheatham, William B	Nov. 4
Riley, Michael J	Nov. 5
Begley, Peter G	Nov. 7
Wilson, John M	Nov. 7
Carlow, William H	Nov. 9
Hadley, William	Nov. 9
Hoffman, Frank J	Nov. 9
Huffman, Edward W	Nov. 10
Morgan, Charles D	Nov. 10
Steiner, George W	Nov. 10
Graham, Alexander P	Nov. 13
Stevens, Charles J	Nov. 13
Watkins, Frank S	Nov. 13
West, William J	Nov. 13
Rands, Joseph R	Nov. 14
Charnley, Thomas H	Nov. 16
Pendleton, Alex. B	Nov. 18
Roberts, George	Nov. 18
Campbell, Anthony T	Nov. 20
Thomas, Augustus	Nov. 20
Jones, Frank A	Nov. 21
Daniels, Jessie E	Nov. 23
Johnson, Chas. H., Jr	Nov. 23
Farley, George C	Nov. 24
Goudin, Henri	Nov. 25
Schuler, Frank P	Nov. 25
White, Alfred	Nov. 25
Brenner, Joseph B	Nov. 27
Emery, Edward L	Nov. 28
Lohmann, Ervin O	Nov. 28
Morrison, W. G	Nov. 28
Chambers, Albert	Dec. 1
Devlin, John J	Dec. 1
Hochenedel, Vivian M	Dec. 1
Malone, Charles D	Dec. 1
Roberts, Edward	Dec. 1
Rosteck, William M	Dec. 1
Teague, Robert C	Dec. 1
Gibson, John	Dec. 2
Harrell, James C	Dec. 2
Struthers, Andrew B	Dec. 2
Voight, Albert D	Dec. 3
Diehl, William C., Jr	Dec. 5
Robitoy, Louis P	Dec. 5
Seaton, Homer R	Dec. 5
McQueen, Philip O	Dec. 6
McAllister, James B	Dec. 7
Walker, Charles R	Dec. 7
Boggs, Edward M	Dec. 8
Day, Henry G	Dec. 10
Edwards, Albert R	Dec. 10
Pilson, Charlotte E	Dec. 10
Driscoll, John G	Dec. 11
Wilson, William H	Dec. 12
Healey, George W	Dec. 14
Minichan, Horace D	Dec. 14
Simpson, Theodore H	Dec. 14
Wells, William A	Dec. 14
Langworthy, John	Dec. 15
Keith, George W	Dec. 16
La Sera, Tony	Dec. 18
McAdam, Harry	Dec. 18
Nelson, Edward	Dec. 18
Cooper, Hal B	Dec. 20
Trahey, Thomas G	Dec. 20
Grund, William E	Dec. 21
Shannon, Walter M	Dec. 21
Davis, Clarence E	Dec. 22
Greame, Andrew	Dec. 22
Keene, Raymond F	Dec. 22
Bolten, Herman T	Dec. 26
Fomon, Harry L	Dec. 28
Loken, Harold O	Dec. 29
Scheib, Edwin C	Dec. 30
Bailey, Thomas B	Dec. 31

RED CROSS AND COLON FIRE.

Restriction of Relief Work—Action of Colon Residents.

The work of relieving the sufferers by the fire in Colon on March 23 has been continued by the Red Cross, at the tent village started in Colon on March 24. Many of those who at first were destitute have ceased to depend on the relief camp, either wholly or in part, and the work of reducing the relief granted has been begun. Accurate records have been kept of 350 families whose need has been determined beyond question, and these represent about 1,200 people. Rations averaged 582 a day up to April 9, each ration representing enough food for one day's subsistence, and in addition a large quantity of condensed milk has been issued for infants. There has been less illness among infants in the camp than among those living in houses, according to the observation of the district nurse, who visits both classes of habitation. In dispensing with the relief work three options are given to the families whose need has been established: Rations for the balance of the month; house rent for a month; or an order for five dollars worth of clothing on the commissary, which has reduced prices on this clothing to the least point. New frame buildings are being constructed on the area burned over.

The following letter and resolutions have been made of record:

PROCEEDINGS OF THE SESSIONS OF APRIL 1, 1911.

The committee for the distribution of the funds assigned for the aid of the victims of the fire of March 23 last, met in the office of the Governor of the Province in the city of Colon on the first day of April, 1911, at 9 a. m., the following members being present: Rafael Neira A., Governor; Gerardo Abrahams C., Administrator of Provincial Funds; Juna Angel Gomez, Prosecuting Attorney; Hilary B. Parker, and Benigno Andrion, secretary.

In accordance with the resolution of the previous session, Mr. Neira made the following resolution, and the same was unamimously approved:

"The distributing committee of the funds which the Government of the Republic may contribute for the relief of the victims of the recent fire in this city, Considering:

"That the Government of the Republic has voted the sum of $5,000 gold for the aid of the most needy victims of the fire which took place on the 23d of March, and has appointed a committee to distribute these funds in the manner deemed most advisable; Considering:

"That the American Red Cross Society, voluntarily and with the greatest interest has taken charge of the providing of food and lodging for the most destitute among the unfortunates of the above mentioned catastrophe and has actually provided a camp where food and shelter are provided for the needy; Considering:

"That the Red Cross Society is better able to distribute with fairness and prudence among the destitute victims the funds appropriated by the Government of the Republic, providing food and clothing to the most needy: Considering:

"Lieut.-Col. C. A. Devol, President of the Red Cross Society, has signified that said society will accept the said sum of five thousand Balboas which the Government of the Republic wishes to distribute among the poor who suffer from the fire of March 23, and that the Red Cross will appropriate said sum in conformity with the wishes of the Government donating it; Resolved:

"The distributing committee created by the Government of the Republic to exercise the function of administering and distributing the said sum of five thousand Balboas appropriated by the National Treasury for the relief of the most poverty-stricken and needy of the victims of the fire of March 23, shall deliver in the name of the Government of the Republic of Panama, by authority vested in said distributing committee of said five thousand Balboas to be received from the National Treasury, said sum to the Red Cross Society of the Canal Zone, in order that this society may administer and dispense same in the relief and aid of the victims in accord with the intentions of the Government.

"The delivery of this sum will be made by the treasurer of the committee, Mr. J. H. Stillson, to the treasurer of the Red Cross Society, Lieut.-Col. John L. Phillips.

The Governor of the Province is commissioned to manage the delivery of the relief fund to the treasuer of the committee.

This is to be communicated to all interested."

There being no further business, the session was adjourned, and this action is endorsed by the signature of the Governor-President. Rafael Neira A.; the Administrator of Provincial Funds, Gerrarado Abrahams C.; District Attorney, J. Angel Gomez; Treasuer of Committee, J. H. Stilson; the Secretary, Benigno Andrion; Member, Hilary B. Parker.

OFFICE OF THE GOVERNOR OF THE PROVINCE,
COLON, R. P. April 8, 1911.

SIR:

Please find enclosed a true copy of the resolution unamimously adopted by the committee charged with the distribution of the funds voted by the Government of Panama for the relief of the victims of the recent fire in the city of Colon, which fire occurred on the 23d of March, 1911. The sum voted amounts to $5,000 gold, or $10,000 Panamanian silver, and same has been delivered by the treasurer of our committee to Lieut.-Col. John L. Phillips, treasurer of the Canal Zone Chapter, American National Red Cross, by sight draft duly endorsed.

I reiterate, my dear Colonel, the expressions of gratitude on behalf of my Government, and on behalf of myself personally, toward the Red Cross, over which you so worthily preside, for its benevolent and incessant labor so successfully carried on today in this city for the relief and aid of the victims of the deplorable fire.

I improve this opportunity to express to you my feelings of profound respect and thanks.

RAFAEL NEIRA A.,
Governor of the Province.

LIEUT.-COL. C. A. DEVOL,
Chairman, Canal Zone Chapter,
American National Red Cross,
Culebra, C. Z.

Women's Clubs.

At the meeting of the executive board of the Canal Zone Federation of Women's Clubs and conference of presidents held at Empire on Tuesday, April 4, a proposed plan of slight changes in the character and meetings of the organization was discussed and a committee was appointed to make such revisions in the by-laws as will coincide with these plans. At the close of the meeting tea was served by the Empire Woman's Club. The annual meeting of the federation will be held at Gatun on April 21. Transportation will be furnished the delegates, alternates, and federation officers, as usual. The meeting will convene at the Commission clubhouse at 1.15 a. m. A meeting of the executive board will be held at 1 o'clock. Committee chairmen should call their meetings as soon as possible after the arrival of the trains from either end of the line.

At the meeting of the educational department of the Cristobal Woman's Club on Wednesday, April 5, a paper on the Canal fortifications was read by Mrs. Tracy Robinson.

A tea was held by the Gatun Sunshine Society at the Commission chapel on Thursday afternoon, April 6, for the benefit of the organization. Tea, sandwiches, and cakes of various kinds were served at a nominal sum. The tables were decorated with cut flowers and the members of the society served. During the afternoon there was music by Mrs. Matt Johnson, Miss Neville, and Mrs. Reginald Hughes.

Church Notes.

On April 23, the corner stone of a new church building will be laid by the negro Baptist congregation in Empire. The building is a barrack, which has been purchased from the Commission, and is to be remodelled at a cost of $500.

The last Lenten meeting of the Woman's Altar Guild of St. Luke's Church, Ancon, was held in the church on Tuesday morning, April 11, at 9 o'clock. Following the services the chaplain gave a discourse on the tenets of the Episcopal church. The Easter offering of the congregation will be for the Aged and Infirm Clergy Fund.

At a missionary meeting held by the Rev. W. W. Gray at Gorgona the last week in March, it was decided by the women of the Methodist church in that village to support a scholarship in the Panama College in Panama. Mrs. W. W. Gray was one of the speakers of the afternoon.

Twelve members of the Woman's Foreign Missionary Society of the Methodist Episcopal Church, from Ancon, Balboa, and Panama, went to Culebra on Wednesday afternoon, April 5, and held a missionary meeting in the Commission clubhouse with 35 Culebra women. There was a program consisting of papers by the members, musical numbers, an address by the president of the society, Mrs. W. W. Gray, on "Women of Eastern Lands in Comparison with Women of Western Lands," and an informal address by Mrs. James Stokoe. At the close of the meeting the Culebra women presented a sum of money to be used in its work here.

A meeting of the Ladies' Auxiliary to the Empire Christian League was held in the chapel on Friday afternoon, April 7, when the speaker and guest of honor was Miss Helen Brown, who for 30 years has been a city missionary and Sunday school visitor in Buffalo, N. Y. A paper on general missionary work was read by the president of the auxiliary, Mrs. Philip Kelly. A committee was appointed to decide upon the decoration for the interior of the chapel, with the vice-president, Mrs. Gaw, as chairman. The auxiliary has accepted an invitation to meet with the missionary society of Panama and Ancon at the home of Mrs. E. W. Keyser in Ancon on May 4.

The Woman's Altar Guild of Christ Church, Colon, will hold a meeting at the residence of Mrs. P. T. Murphy, Colon Beach, on Thursday, April 20, at 3.30 o'clock. The Rev. Edward J. Cooper, rector of Christ Church, will make an address on "Guatemala." A contribution for the guild treasury will be asked.

St. Andrews Episcopal Church, Empire, has received as an Easter memorial gift a solid silver communion service with two cut glass cruets, from Miss Mary Wier of Philadelphia. The interior of the church has been painted, and the building is now complete and free from debt. The work was commenced in 1909, under the Rev. W. H. Decker, who is still in charge.

Missing Men.

Any one having information regarding the whereabouts of Harold A. Shafer, who left the service of the Commission in January, 1911, is requested to communicate with THE CANAL RECORD.

Any one having information regarding the whereabouts of J. M. Fowler, who is supposed to be on the Isthmus, is requested to communicate with the American Consul General, Panama.

Any one having information regarding the whereabouts of C. M. Russell, who is supposed to be on the Isthmus, is requested to communicate with THE CANAL RECORD.

OFFICIAL CIRCULARS.

Transfer of Gatun Mechanical Shops.

CULEBRA, C. Z., April 4, 1911.

CIRCULAR No. 183-Q:

1. Effective April 5. 1911, the Gatun machine shop of the Atlantic Division will be transferred to the Mechanical Division.

2. On and after April 5, 1911, the Mechanical Division will hostle all locomotives, inspect and repair all cars, and will perform all mechanical work, both day and night, resulting from this transfer, as may be required by the Division Engineer of the Atlantic Division or such representatives as he may authorize to direct the performance of such work.

3. The Division Engineer of the Atlantic Division and his authorized representatives may call direct upon the foreman of the Gatun shop for mechanical work, provided that the manufacture of new material and the making of alterations will he done as provided in Circulars Nos. 343, 343-A, and 343-B.

4. The Division Engineer of the Atlantic Division will notify the Superintendent of the Mechanical Division and the foreman of the Gatun shop direct what representatives of the Atlantic Division are authorized to call upon the Gatun shop for mechanical work, and will also advise as to the classes of work the cost of which he desires should be kept separately.

5. All machines, tools and other equipment in the Gatun shop will be inventoried and receipted for by the Superintendent of the Mechanical Division, but no credit for their value shall be given until it shall have been demonstrated by a four months' trial whether the transfer has resulted in economy and increased efficiency to the construction work of the Atlantic Division.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Transfer of Equipment.

CULEBRA, C.Z., April 7, 1911.

CIRCULAR No. 370-A:

In carrying out the procedure laid down by Circular No. 370 regarding transfer of equipment, so far as this circular refers to locomotives, cars and other rolling stock, it is desired, in order to save time, that before forwarding requests for such transfers to the Surveying Officer the department or division head shall, through his representative on the transportation committee, obtain information that will enable him to indicate on the request the division or department from which the transfer shall be made. If, after following this procedure, the division or department head is unable to indicate where the rolling stock desired can be obtained, a statement to that effect should be made on the request forwarded.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Leasing of a Building at Empire.

ANCON, C. Z., March 29, 1911.

Bids will be received by the Collector of Revenues, up to and including April 20, 1911, for the leasing to the highest bidder, from May 1, 1911, for a period of not more than three years, of building No. 16 at Empire owned by the Canal Zone Government The building is of French construction, two stories, and contains, in all, 12 rooms. Bids should be in envelopes marked, "Bids for a lease to Building No. 16 at Empire."

TOM M. COOKE, *Collector of Revenues.*

Cold Storage Price List.

The price list of cold storage articles as published in THE CANAL RECORD of April 5, remains unchanged.

Red Cross Finances.

The financial statement of the Canal Zone Chapter, American National Red Cross, for the month, of March, 1911, follows:

RECEIPTS.

March 1. Balance on hand	$2,962.79	
March 23. Recepts, account of ball, February 18	4.50	
March 23. Donated by Captain Power of the British Army	10.00	
March 21. Interest credited by bank, October to March	15.68	
March 31. Membership dues during month	61.00	
		$3,053.97

DISBURSEMENTS.

March 4 to 15. Expenses of ball, February 18, as per vouchers attached	$166.66	
March 13. Relief of young man without employment, Colon	25.00	
March 18. Relief of American seaman out of work, Colon	5.00	
March 29. Relief of man in Colon Hospital being deported	22.50	
March 31. Postage during month as per receipts attached	7.57	
Total disbursements		$226.73
March 31. Balance on hand		$2,827.24

JOHN L. PHILLIPS, *Treasurer.*

Approved: C. A. DEVOL, *Chairman.*

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Toro Point, C. Z., on Sunday, April 16, 1911, at 2.30 p. m. The program follows:

1	March—*Kiss Me Honey, Kiss Me*	Snyder
2	Selection—*Romeo and Juliet*	Gounod
3	Waltz—*Heart Murmurs*	Rolfe
4	Overture—*Martha*	Flotow
5	Flower Song—*Sweet Summer Rose*	Armand
6	Medley Selection—*Popular Songs*	Alford
7	Intermezzo—*Silver Bell*	Wenrich
8	Descriptive—*A Hunting Scene*	Bucalossi
9	March—*Midshipman*	Laurendeau

Chas. E. Jennings, *Musical Director.*

The next concert will be given at Culebra on Sunday, April 23, at 5.45 p. m.

Found—A dress suit case bearing the name "C. M. Russel" has been received by the West Coast Trading Company of Panama from San Francisco. The owner can obtain possession by proper identification.

CLASSIFIED EXPENDITURES.

A statement of classified expenditures under the Isthmian Canal Commission to February 28, 1911, follows:

PERIOD.	Department of Civil Administration.	Department of Sanitation.	Department of Construction and Engineering.	General Items.	Total.
Total to June 30, 1909	$3,427,090.29	$9,673,539.28	$69,622,561.42	$78,022,606.10	$160,745,797.09
Total, fiscal year 1910	709,351.37	1,803,040.95	26,300,167.05	2,863,088.83	31,675,648.20
July, 1910	58,474.88	156,006.64	2,216,849.78	280,015.85	2,711,347.15
August, 1910	63,887.05	164,220.65	2,348,777.07	336,961.35	2,913,846.12
September, 1910	60,586.46	153,433.27	2,516,814.41	236,170.76	2,967,004.90
October, 1910	37,250.26	146,587.47	2,565,042 28	295,537.33	3,044,417.34
November, 1910	71,981.80	137,912 89	2,356,292.01	233,587.25	2,799,773.95
December, 1910	69,424.73	144,754.71	2,480,221.44	179,047.95	2,873,448.83
January, 1911	71,426 87	137,665 14	2,202,370.20	235,678 30	2,647,140.51
February, 1911	69,886.61	127,198.56	2,172,805.21	173,109.54	2,542,999.92
Total	$4,639,360.32	$12,644,359.56	$114,781,900.87	$82,855,803.26	$214,921,424.01

WEATHER CONDITIONS, CANAL ZONE, MARCH, 1911.

STATIONS.	Press're (reduc'd to mean of 24 hours.)	Temperature.					Mean relative humidity.	Precipitation.			Wind.				
		Mean.	Maximum.	Date.	Minimum.	Date.		Total inches.	Station average.	Number of rainy days.	Total movement (in miles.)	Prevailing direction.	Max. velocity (in miles.)	Direction.	Date
Cristobal	29.935	78.3	82	24	71	2	77	1.41	1.69	13	9,606	N	26	N.E	6
Culebra	29.919	78.0	91	31	65	27	80	.06	.71	1	8,051	N.W.	30	N	7
Ancon	29.905	80.0	93	24	65	11	76	.26	.84	2	7,143	N.W.	24	N	3

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, April 8, 1911:. All heights are in feet above mean sea level.

DAY AND DATE.	STATION.				
	Vigia.	Alhajuala	Gamboa.	Bohio.	Gatun Lake.
Sun. April.2	125.4	91.9	44.5	12.1	12.1
Mon. April 3	125.5	91.9	44.5	12.1	12.1
Tues. April 4	126.3	92.1	44.5	12.1	12.1
Wed. April 5	126.3	92.8	45.3	12.1	12.1
Thurs. April 6	126.0	92.5	44.9	12.2	12.2
Fri. April 7	125.9	92.5	45.0	12.2	12.2
Sat. April 8	126.3	92.8	44.8	12.3	12.3
Height of low water	125.0	92.0	44.0		

March Rainfall for Three Years.

STATION.	1909	1910	1911	Station Average	Years of Record	Rai'y days 1910
Pacific Section–	*Ins.*	*Ins.*	*Ins.*	*Ins.*		
Ancon	.18	1.83	.26	.84	13	2
Balboa	.14	2.16	0	.91	12	0
Miraflores	1.11	2.49	0	1.20	3	0
Pedro Miguel	.59	1.46	.03	.54	4	1
Rio Grande	.18	1.69	.06	.37	7	1
Centra Section–						
Culebra	.15	1.36	.06	.71	21	1
Camacho	.40	2.36	.13	.68	5	2
Empire	.21	1.60	.20	.50	6	1
Gamboa	.56	3.12	.38	.86	27	3
Alhajuela	.29	2.74	.01	.71	12	1
El Vigia	.32	2.95	.04	1.10	3	2
Gorgona	......	2.98	.36	1.14	6	2
San Pablo	.46	4.47	.55	1.49	4	6
Tabernilla	.99	5.44	.66	1.96	4	7
Bohio	3.66	6.60	.97	2.01	16	11
Trinidad	3.08	8.18	2.33	3.89	4	19
Monte Lirio	4.85	9.57	1.41	4.64	4	14
Atlantic Section–						
Gatun	2.99	9.08	1.80	3.25	7	13
Brazos Brook	2.90	9.71	1.30	3.78	5	13
Cristobal	1.85	5.46	1.41	1.69	42	13
Porto Bello.	3.56	6.32	2.38	3.30	4	18
Nombre de D	1.43	......	1.04	1.24	2	18

Rainfall from April 1 to 8, Inclusive.

STATIONS.	Maximum in one day	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	.76	4	1.47
Balboa	1.31	4	2.20
*Miraflores	1.05	4	1.67
Pedro Miguel	1.44	8	2.60
Rio Grande	2.29	8	2.81
Central Section—			
Culebra	1.03	8	1.29
*Camacho	1.14	8	1.39
Empire	.57	8	.66
Gamboa	.76	8	.89
*Juan Mina	.36	8	.39
Alhajuela	.81	8	.82
*El Vigia	.37	8	.43
*Gorgona	1.40	7	1.99
San Pablo	1.32	8	1.60
Tabernilla	2.08	8	2.88
Bohio	.42	4	.90
Atlantic Section—			
Gatun	.09	6	.40
*Brazos Brook	.43	8	1.02
Cristobal	.33	6	.59
Porto Bello	.26	4	*.33

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to modnigth.

†To 5 p. m., April 7.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending April 19, 1911 (75th meridian time):

DATE.	Low.	High.	Low.	High.	Low.
	A. M.	A. M.	A. M.	P. M.	P. M.
April 13	......	3.48	†9.55	4.00	10.17
April 14	......	4.28	10.33	4.38	10.55
April 15	......	5.02	11.10	5.12	11.30
April 16	......	5.37	11.47	5.45	......
			P. M.		
April 17	12.06	6.09	12.22	6.16	......
April 18	12.40	6.40	12.57	6.48	......
April 19	1.16	7.15	1.34	7.22	......

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

GENERAL NOTES.

The first series of entertainments given by the Yost Concert Company proved so pleasing that a series of return engagements has been arranged as follows: Empire, April 16; Corozal, April 18; Cristobal, April 20; Gorgona, April 23, and Gatun, April 24.

COROZAL.

The first league indoor baseball game between Corozal and Cristobal was played at Corozal on Saturday night, April 8. The following is the lineup of the teams: Cristobal—Russell, McSparren, R. Russell, Semons, Simms, Curtis, Wehmeier. Corozal—Bath, Lorah, Cuff, Schlager, Lofgren, Taylor, Rawley. The score was 10 to 4 in favor of Corozal.

All men interested in indoor baseball, games, and gymnastic work are welcome to the classes. Monday and Wednesday of each week has been set aside for work of this nature.

A discussion club on "Life probems" will hold its first meeting on April 13. Such topics as "The value of work," and "The choice of a life work," will be discussed.

CULEBRA.

The 200, or over, scores in bowling for the week ending April 8 are as follws: Warner, 211; Leylander, 208; Baumer, 207. The 100, or over, scores in duckpins for the same week are as follows: Kersey, 108, 102; Fox, 107; Hill, 106; Huttlemeier, 104, 101; McIlvaine, 100.

The following are the moves up to and including April 8 in the game of chess being played by wireless between the Porto Bello and Culebra chess teams, one move a day:

	Porto Bello.		Culebra.
1.	P —K4	1.	P —K4
2.	Kt—KB3	2.	Kt—QB3
3.	B —B4	3.	B —B4
4.	P —QB3	4.	Kt—KB3
5.	P —Q4	5.	P × P

This opening is called the Giuoco Piano or Italian game.

EMPIRE.

The following high scores were rolled in duckpins during the week ending April 8: W. G. Brown, 103; H. Rodeghiere, 103, 107, 102, 105, 102, 106, 104, 103, 101; S. Parkis, 104, 131; Pinney, 100; Gustavson, 102, 100, 102, 102, 110; Giavelli, 105, 105; Koperski, 100; Danielson, 101; Pearson, 103, 107; Witmer, 102 J. Parkis, 101; Huson, 106.

The meeting of the literary society was postponed from Friday April 7, to Monday, April 10. The program was: Reading, Owen King, "A Costa Rican Vacation," Edward Thompson; "The Mexican Situation," E. L. Zacharias.

Moving pictures will be exhibited on April 12 and 19. There will be soloists on both of these occasions.

The score of the first half of the Isthmian pool tournament between DePoorter and Hersh was decided in favor of DePoorter by a score of 156 to 121. The other half will be played at Gatun on Saturday evening, April 15.

A preliminary duckpin tournament is in progress and the 12 high men will represent Empire in the inter-association contests.

The March handicap pool tournament was won by H. F. Edwards.

The winning team in the gymnasium group contest was composed of Messrs. Feurtardo, Adams, Jones, Lang and Koperski. The total number of points made by this team was 2,785. M. A. Hall had the highest individual total with 636 points.

GORGONA.

The indoor baseball league opened in Gorgona on Saturday evening, April 8, when Gorgona won from Empire by the score of 11 to 8.

A local duckpin tournament started on April 3, with seven three-men teams entered.

A. A. Simka and W. I. Hodeson challenge anyone on the Isthmus to a match game of shuffleboard, either singles or doubles.

GATUN.

"The City" from the social and political standpoint, was discussed by the "Life problems club" on Sunday evening, April 9.

The program for the literary club on Wednesday night, April 5, included a piano selection by Miss Neville, baritone solo by Mr. Shailer, tenor solo by Mr. Perkins, and a violin solo by Mr. Smith. Mr. Ludwig read a paper on "History of Fencing." In the debate on "Natural Wonders of the New and Old World," the following men participated: Messrs. Chatfield, Whiting, Smith and Wond. Mr. Smith gave a reading on "William Jennings Bryan, the Orator." Ladies are now allowed to join the club.

A duckpin bowling team called the "Five D's" challenges any other team on the Isthmus whose last names begin with a common letter. The Gatun D's are as follows: Durand, DeMoll, DePoorter, Dalton, and Dickson.

A handicap pool tournament will be started on April 17. The prizes are a gold medal, first; cuff links, second; ivory jointed cue, third.

PORTO BELLO.

On April 7, the people of Porto Bello gathered at the clubhouse in the evening to celebrate the first anniversary of the opening of the clubhouse. Miss Harris and Melville Booz gave several selections on the piano. Mr. Ray played the banjo. Capt. H. W. Stickle reviewed some of the work of the Y. M. C. A. and E. D. Butler gave a reading.

Married.

HOSTETTER-SCOFIELD—At St. Luke's Church, Ancon, on Wednesday, April 5, Florence Alma, daughter of Mr. and Mrs. A. B. Schofield of Winona, Minn., to Herbert Peart Hostetter of Chicago, Ill., Chaplain Henry A. Brown officiating. Residence, Chicago.

Misdirected Letters.

The following insufficiently addressed letters originating in the United States and its possessions have been received in the office of the Director of Posts and may be secured upon request of the addressee:

Anderson, Mrs. Chas.
Bjorling, C. J.
Burnes, T. M.
Carter, Henry B.
Cotton, Fr.
Crow, Miss Ada M.
Dambournelis, B.
DeGraham, Fred Forbe
Englesberg, David
Fetters, William
Heweston, A.
Holmes, Mrs. W. J.
Louden, H. P.
Mittleman, Miron
Nouland, Capt. C. P.
Peart, Tom
Read, Mrs. M. O.
Rowley, Mrs. Emily
Smith, H. K.
Souders, H. L.
Stoddard, R. J.
Strogher, Edwin
Volk, Rev. Father

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal and Colon during the week ending April 8, 1911:

Alcana, April 3, from New York, with 13,550 barrels cement for Atlantic Division; 63,160 bags cement for Pacific Division.

Haakon VII, April 5, from Baltimore, with 6 pieces mushroom anchors, 29 bundles castings, 6 pieces castings, 60 pieces pipe, 12 cases valve material, 31 crates valve material, 30 pieces valve material for Pacific Division; 60 pieces pipe, 35 crates valve material, 35 pieces valve material, 14 cases valve material, 3 pieces boiler and stack, 35 bundles steel castings, 6 cases steel castings, 69 pieces steel castings, 42 crates steel castings for Atlantic Division; 14 pieces steel castings, 6 bundles steel castings, 2 cases steel castings for Mechanical Division; 105 pieces frogs, 15,000 bundles tie plates, 98 tons coke, 10 cases paint, 500 cases dynamite for stock.

Atenas, April 6, from New Orleans, with 7 pieces castings for Central Division; 112 tons pig iron for Mechanical Division; 29,000 feet yellow pine lumber for stock.

Zacapa, April 6, from New York, with 385 coils rope; 300 cases linseed oil for stock.

Colon, April 6, from New York, with 6 cases rubber sleeves, 942 bundles steel bars, 1,500 pieces steel bars 8 cases filing cabinets for Atlantic Division; 10 cases missing links for Central Division; 8 cases tape, 50 pieces couplers, 252 pieces knuckles, 6 barrels locks for Mechanical Division; 44 barrels alcohol, 32 packages drugs and sundries for Sanitary Department; 50 cases alcohol, 10 cases rubber hose, 88 cases caustic soda, 18 cases enamel ware, 50 cases sapolio 8 crates mop handles, 104 barrels sulphate of aluminum, 5 cases trays, 6 cases glassware, 8 barrels compound, 10 bags oats, 50 pieces car wheels for stock; and a miscellaneous cargo, the whole consisting of 3,313 packages, weighing 202 tons.

Linda Fell, April 7, from New York, with 10,555 barrels cement for Atlantic Division; 59,200 bags cement for Pacific Division.

The following vessels arrived at or departed from the port of Balboa during the week ending April 8, 1911:

Arrivals—April 2, *Ecuador*, from Guayaquil; April 3, *Guatemala*, from Callao; *Peru*, from Guayaquil; April 4, *Manga Reve* and tug *Hercules*, from San Francisco.

Departures—April 2, *Leelanaw*, to San Francisco; April 3, *Mantaro*, to Callao; April 4, *Mathilda*, to south ports; *Santa Maria*, to Port Harford; April 5, *Loa*, to Valparaiso; *Manavi*, to Guayaquil; April 7, *City of Para*, to San Francisco; April 8, *Stanley Dollar*, to San Francisco.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Panama	P. R. R.	Wednesday	April 12
Cristobal	P. R. R.	Tuesday	April 18
Ancon	P. R. R.	Monday	April 24
Allianca	P. R. R.	Saturday	April 29
Colon	P. R. R.	Saturday	May 6
Advance	P. R. R.	Friday	May 12
Panama	P. R. R.	Thursday	May 18
Allianca	P. R. R.	Wednesday	May 24
Colon	P. R. R.	Wednesday	May 31
Advance	P. R. R.	Tuesday	June 6
Panama	P. R. R.	Monday	June 12
Allianca	P. R. R.	Saturday	June 17
Colon	P. R. R.	Saturday	June 24
Advance	P. R. R.	Friday	June 30

CRISTOBAL TO NEW YORK.

Advance	P. R. R.	Tuesday	April 18
Panama	P. R. R.	Tuesday	April 25
Cristobal	P. R. R.	Tuesday	May 2
Ancon	P. R. R.	Monday	May 8
Allianca	P. R. R.	Friday	May 12
Colon	P. R. R.	Thursday	May 18
Advance	P. R. R.	Wednesday	May 24
Panama	P. R. R.	Wednesday	May 31
Allianca	P. R. R.	Tuesday	June 6
Colon	P. R. R.	Tuesday	June 13
Advance	P. R. R.	Sunday	June 18
Panama	P. R. R.	Saturday	June 24
Allianca	P. R. R.	Friday	June 30
Colon	P. R. R.	Thursday	July 6
Advance	P. R. R.	Wednesday	July 12

NEW YORK TO COLON.

Santa Marta	U. F. C.	Thursday	April 13
Prinz Sigismund	H.-A.	Friday	April 14
Magdalena	R. M.	Saturday	April 15
Metapan	U. F. C.	Thursday	April 20
Prinz Joachim*	H.-A.	Saturday	April 22
Zacapa	U. F. C.	Thursday	April 27
Prinz Eitel Friedrich	H.-A.	Friday	April 28
Clyde	R. M.	Saturday	April 29
Almirante	U. F. C.	Thursday	May 4
Prinz Aug. Wilhelm*	H.-A.	Saturday	May 6
Santa Marta	U. F. C.	Thursday	May 11

COLON TO NEW YORK.

Zacapa	U. F. C.	Thursday	April 13
Prinz Eitel Friedrich	H.-A.	Tuesday	April 18
Clyde	R. M.	Tuesday	April 18
Almirante	U. F. C.	Thursday	April 20
Prinz Aug. Wilhelm*	H.-A.	Tuesday	April 25
Santa Marta	U. F. C.	Thursday	April 27
Prinz Sigismund	H.-A.	Tuesday	May 2
Thames	R. M.	Tuesday	May 2
Metapan	U. F. C.	Thursday	May 4
Prinz Joachim*	H.-A.	Tuesday	May 9
Zacapa	U. F. C.	Thursday	May 11

NEW ORLEANS TO COLON.

Parismina	U. F. C.	Wednesday	April 12
Abangarez	U. F. C.	Saturday	April 15
Heredia	U. F. C.	Wednesday	April 19
Atenas	U. F. C.	Saturday	April 22
Cartago	U. F. C.	Wednesday	April 26
Turrialba	Y. F. C.	Saturday	April 29
Parismina	U. F. C.	Wednesday	May 3
Abangarez	U. F. C.	Saturday	May 6

COLON TO NEW ORLEANS.

Atenas	U. F. C.	Thursday	April 13
Cartago†	U. F. C.	Thursday	April 13
Turrialba	U. F. C.	Thursday	April 20
Parismina†	U. F. C.	Thursday	April 20
Abangarez	U. F. C.	Thursday	April 27
Heredia†	U. F. C.	Thursday	April 27
Atenas	U. F. C.	Thursday	May 4
Cartago†	U. F. C.	Thursday	May 4
Turrialba	U. F. C.	Thursday	May 11
Parismina†	U. F. C.	Thursday	May 11

COLON TO BARBADOS, CALLING AT TRINIDAD.

Magdalena	R. M.	Tuesday	April 25

Hamburg-American steamers leave Colon for New York via Kingston every Tuesday at 10 a. m., and those designated (*) call at Santiago, Cuba; for Bocas del Toro and Port Limon on alternate Wednesdays, by ships designated (*).

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships designated (†) for New Orleans via Port Limon and Puerto Barrios on Thursday at 4 p. m.; ships for New York via Kingston on Thursday at 11 a. m.; for Bocas del Toro on Monday at 6 p. m.

The Leyland Line ship *Californian* will sail from Colon for New Orleans via Port Limon on April 21.

CANAL RECORD

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The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

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Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Chairman's Report.

The report of the Chairman of the Isthmian Canal Commission for the month of March is published in full in other columns of this issue of THE CANAL RECORD. It gives a detailed account of the progress of Canal work in all departments and divisions.

Lighting the Canal.

A general project for lighting and buoying the Panama Canal has been submitted by Lieut.-Col. Hodges, Assistant Chief Engineer, and has been approved. It is based on a study made by Walter F. Beyer, an assistant engineer, who has been detailed by the Lighthouse Board in Washington for this purpose. The report follows:

> The scheme of illumination contemplates the use of range lights to establish direction on the longer tangents, and of side lights spaced about one mile apart to mark each side of the channel. The range lights are omitted in the Cut, where the use is hardly practicable, and on four of the shorter tangents on the remainder of the Canal. The project includes a light and fog signal on the west breakwater in Limon Bay, a light on the east breakwater, should it be built, and gas and nun buoys lighting and marking the channel to the Mount Hope dry dock. Mr. Beyer has also made a separate estimate, not included in the general lighting project, for light and fog signals at the Pacific entrance to the Canal and shore lights in its neighborhood.
>
> The estimate for all the structures needed for the Canal proper, exclusive of the coast lights on the Pacific side, is, say, $658,000. This includes light-keepers' dwellings, buoy depots, and a boat landing, as well as the purchase and establishment of all the aids to navigation. It also includes a gas-charging plant, and certain expenditures in converting a tug into a lighthouse tender, and repairing launches for maintenance. It does not, however, include the original purchase price of any floating plant, it having been assumed that this can be provided at the close of construction from present construction plant, the price having then been written off in the plant arbitraries. The annual maintenance charge of the system, when in full operation, is estimated at about $60,500.
>
> The additional cost of the coast aids to navigation exterior to the Canal on the Pacific side, is estimated at $97,000.
>
> It is proposed to use gas for the lighted buoys in all the sections of the Canal, and for the beacons in the Gatun Lake section. For the beacons in the Atlantic, Pacific, Miraflores and Culebra Cut sections, electricity is to be used as the illuminant. The cost of the original installation for electricity is slightly greater than for gas, but the maintenance is very much less. The original tentative estimate for lighting the Canal, included in the estimate for 1908, was $500,000.
>
> Should it be decided to install now only the necessary permanent features without lighting apparatus, except for the harbor lights at the entrance to the Canal, the cost would be about $433,000. This is equivalent to assuming that no night traffic on the Canal will be permitted for some time, and that the illuminating apparatus will not be installed until the need for it shall arise.
>
> In any event, certain parts of the work should be taken in hand immediately. The most pressing part is the clearing, which will have to be done for the establishment of the beacons and range lights and for the lines of sight for referencing the important buoys and beacons. This work must be accomplished in Gatun Lake before the water is allowed to rise next year. It would be well to undertake, as time serves, the casting of the reinforced concrete structures for beacons and towers, which casting can conveniently be done at some single place, the finished structures to be transported and placed when completed.
>
> No specific appropriation has been made for this work, but it evidently should be begun at once, proper accounts being opened for the purpose, and the amounts needed being supplied from time to time. It is probable that about $100,000 will be needed between now and June 30, 1912. The large expenditures, namely, for purchase of buoys, light-keepers' dwellings, etc., will be estimated for the fiscal year 1913.

The complete plan is to be executed, namely, the plan involving the installation of the lights when the Canal is opened.

Record Work on P. R. R. Relocation.

Six 70-ton and three 105-ton steamshovels working on the relocated line of the Panama railroad, on April 15, excavated 18,210 cubic yards, an average of 2,023 yards a shovel. Six of these shovels were digging in the borrow pits at Monte Lirio and the spoil was hauled in 10-yard steel dump cars to the fill across the Gatun valley. Three of the shovels were working on the Culebra Cut section and the spoil was disposed of in nearby fills.

Steel Casting Plant.

A steel casting plant will be part of the equipment in the permanent shops to be established near the Pacific entrance to the Canal, and it has been decided to purchase the plant now in order that it may be utilized on the Canal work during the coming two years. To this end, bids will be asked for a complete plant, the principal items of which will be as follows:

One Tropenas steel converter, two tons capacity, of a type and design of one in use in an arsenal or navy yard in the United States, provided with a 7½-horsepower motor for tilting. One high pressure blower, with a 75-horsepower motor, single geared to the blower. One double roller sand crusher and mixer, provided with a 10-horsepower motor, direct geared, and a pan of not less than five feet in diameter, weight of rolls to be not less than 2,000 pounds each. One 4-ton, and two 2-ton crane ladles, and eight 150 pound bull ladles. One fuel oil ladle heater for crane ladles and one for bull ladles.

The bids for the plant must provide also for the services of a metallurgical engineer for three months who is competent to instruct in the making of patterns and moulds, melting and mixing of metal for the production of different grades of steel castings, proper operation of the plant, and the making of chemical analyses.

About one million pounds of steel castings were purchased for the Canal during the fiscal year 1910, and the average price per pound was about 15 cents. It is estimated that these castings can be made on the Isthmus at 12 cents per pound. The plant will make it possible to supply parts immediately, instead of waiting from four to nine months for their shipment from the States, and to reduce the stock of spare parts and material kept on hand on the Isthmus and, ultimately, to do away entirely with cast steel spare parts. It is not proposed to install an annealing furnace, as the small amount of this work to be done can be accomplished by fires made from scrap lumber. Sinkheads and risers will be cut off with the saws already installed or by use of an oxy-acetylene plant. Castings will be cleaned by chipping hammers now in use, and the sand blast machine which is being installed for cleaning steel cars. The plant will be installed upon its receipt in the extension recently made to the foundry in the Gorgona shops.

Work in the Pacific Entrance.

It is now possible for ships drawing 18 feet of water to use the Canal at the Pacific entrance from the beginning of the channel in Panama bay to a point eight miles inland, at the lower end of Miraflores Locks, but the Canal is only partially completed to that point, because the channel is not its full width of 500 feet in some parts, and in the last three miles is not at its final depth. Only the first five miles are open to navigation.

The seagoing suction dredge *Culebra* and the ladder dredges *Badger* and *Marmot*, are working in the channel immediately below the lock site, opposite Corozal. These dredges are digging out clay and small rock down to the surface of solid rock that overlies the bottom. After the mud is scraped off the rock, a dam will be thrown across the channel and the water will be pumped out of the basin thus formed, and the rock will then be blasted in the dry. After it is broken up it can be taken out by steamshovel or by the deep digging ladder dredge now building in Scotland.

The suction dredge *Culebra* which was placed on the gridiron at Balboa machine shops on March 28, was returned to service on April 8, after having its bottom scraped and painted and general repairs made. The sand excluding device on the tail end shaft was removed and the shaft and bushings were found in good condition after 14 months of service. The maximum time for bushings to wear prior to the fitting of the sand excluding device was six weeks. The hatches of the coal bunkers were increased in size to facilitate the coaling

NOTES OF PROGRESS.

(*Continued*)

of the ship. It is now possible to place 225 tons of coal in the *Culebra's* bunkers in five hours, only four men being employed. The coal is lifted from a lighter to the hatches of the ship by a clamshell hoist.

The ladder dredge *Marmot*, which was put into commission on May 10, 1909, has been in service almost continuously since that time, and up to March had dredged 2,610,832 cubic yards, an average of 125,537 cubic yards per month for a period of 21 months.

The ladder dredge *Badger* was brought to the marine shops on April 11 for running repairs, and returned to work in the channel near Miraflores Locks on April 17. It had been in continuous service since February 18, 1910. The new bearings, top gears, and manganese tumblers that were installed at that time were found in excellent condition. Last week the lower fenders were removed, the hull scraped and painted, and minor repairs made to condensing and circulating pumps.

The ledges of rock that form part of the bottom at a point about six miles inland are being blasted under water and then taken out by ladder and dipper dredges. The drilling is done by the drill barge *Teredo*, and the blasting also is under the direction of the master of the barge. Holes are sunk to a depth of 55 feet below mean tide and are then loaded with dynamite, an average charge being about 5 tons of explosive to 20 holes. When the blast is set off a sheet of water is thrown 50 feet or more into the air. First there arises a mass of white foam, then a cloud of muddy water as broad but not so high as the white, and finally the gas from the dynamite, a slowly dissipating amber cloud which hangs in the air for quite a minute. When blasting is begun on a ledge large quantities of fish are killed, but almost immediately after the first charges the fish seem to desert the vicinity and only a few are killed by subsequent blasts.

Part of the rock is prepared for the dredges by the sub-aqueous rock breaker *Vulcan* which is now operating in soft material at a point about five miles inland. The amount of work accomplished by this method is not large, but the cost is low.

Gatun Dam Spillway.

The concrete work in the spillway of Gatun Dam is over 53 per cent completed, 132,598 cubic yards out of a total of 250,000 having been placed up to the close of work on April 15. A statement of the amount laid each day last week and of the total in place, follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
	Cu. Yds.		
April 10	216	15:00	2
April 11	200	17:00	2
April 12	212	17:00	2
April 13	154	15:30	2
April 14—Holiday.			
April 15	192	15:00	2
Total	974	79:30	2
Previously reported	131,624		
Grand total	132,598		

Pilots, Masters, Mates, and Engineers.

A meeting of the Board of Local Inspectors will be held on Wednesday, April 26, at 8 a. m., at the Administration building, Ancon, at which time applicants for licenses as Pilots, Masters, Mates, or Engineers, who have submitted applications on the prescribed form, may appear for examination.

Changes in Organization.

On account of the death of W. B. Corse, Resident Engineer of the first district, Pacific Division, the following changes in the organization of that division have been made: H. O. Cole from assistant engineer in charge of municipal work to resident engineer; Frank Cotton from assistant engineer to assistant engineer in charge of municipal work; H. D. Hinman from junior engineer to assistant engineer; W. Rowland from draftsman to junior engineer.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Over 60 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of work on April 15, being 1,268,702½ cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending April 15, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers.		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
April 10	2,308	39:21	6	454	7:40	2	91	2,853
April 11	2,084	39:21	6	652	8:40	2	161	2,897
April 12	1,796	26:10	6	674	8:40	2	209¼	2,679¼
April 13	1,994	32:42	6	706	8:40	2	118½	2,818½
April 14—Holiday.								
April 15	2,196	32:34	4	620	8:40	2	191¾	3,007¾
*Portable mixers	....	....	......	288	....	......	....	288
Total	10,378	170:08	5.60	3,394	42.20	2	771½	14,543½
Previously reported	....	....	......	....	....	......	....	1,254,159
Grand total	....	....	......	....	....	......	....	1,268,702½

The 288 yards shown for the portable mixers are reinforced concrete, and were placed on the following days: April 10, 69 yards; April 11, 36 yards; April 12, 59 yards; April 13th, 45½ yards; April 15th, 78½ yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is over 74 per cent completed, 621,926 cubic yards, out of a total of 837,400, having been placed at the close of work on April 15. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-Cubic yard mixers			AUXILIARY PLANT.						Large stone.	Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete Placed.	Hours worked	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
April 10	910	14:00	2	390	10:00	2	102	6:50	1	....	1,402
April 11	1,024	15:00	2	384	9:50	2	111	6:50	2	....	1,519
April 12	796	12:00	2	188	5:00	1	101	5:50	1	....	1,085
April 13	970	14:00	2	292	7:00	1	176	12:25	2	....	1,438
April 14	Holiday										
April 15	726	15:33	2	276	7:00	1	159	10:50	2	....	1,161
Total	4,426	70:33	2	1,530	38:50	1.40	649	41:25	1.60	....	6,605
Previously reported	....	....	......	....	....	......	....	....	......	4,179	614,926
Grand total	....	....	......	....	....	......	....	....	......	4,179	621,926

MIRAFLORES LOCKS.

Over 14 per cent of the concrete for the system of two twin locks at Miraflores was in place on April 15, the total amount on that date being 191,302 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT.							Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu Yds.*
April 10	798	24:33	4	156	4:00	2	766	46:50	6	....	1,805
April 11	678	20:00	4	212	4:00	2	656	39:50	5	....	1,649
April 12	524	15:50	4	208	4:00	2	545	35:25	6	....	1,345
April 13	772	24:00	4	200	3:67	2	472	35:00	5	....	1,444
April 14	Holiday										
April 15	790	25:33	4	208	4:00	2	541	37:00	5	....	1,539
	....	....	......	....	....	......	*256	25:50	1	....	....
Total	3,562	109:56	4	984	19:67	2	3,236	219:55	5.60	....	7,782
Previously reported	....	....	......	....	....	......	....	....	......	3,693	183,520
Grand total	....	....	......	....	....	......	....	....	......	3,693	191,302

*This 256 yards was mixed by a ½-yard mixer, the amounts for each day being: April 10th, 85 yards; April 11th, 103 yards; April 12th, 68 yards.

COUPON BOOKS FOR CASH.

Three Months Trial to be Made at Gorgona Shops.

It has been decided to make a three months' trial of the cash method of selling commissary and hotel coupon books to employes of the Gorgona shops, beginning May 1. The method now in general use is to issue the books to employes and deduct the value of them from their pay, and a circular published in the April 5 issue of THE CANAL RECORD gives the restrictions on the value of books that may be drawn in any month. The present method has the effect of limiting the number of days on which the books may be drawn, and involves a greater amount of clerical work than will be necessary under a proper cash system. Economy and the convenience of the employes prompt the trial of the new method, and if it is found satisfactory it will be extended to all the force. The details so far agreed upon are given as follows in the report of the committee appointed to arrange the trial:

"That the trial be made beginning May 1, and be limited to employes of the Mechanical Division who are located at Gorgona.

"That the issuing, handling, accounting, etc., of both books and cash be under the control of the Panama Railroad Company (commissaries) and under existing rules and regulations of the Commission, so far as same are not inapplicable to the change in method.

"That the Superintendent of the Mechanical Division have printed such notices as may be necessary and in such different languages as may be required, posting them in conspicuous places in order that all employes may have notice of the change, and be prepared to purchase their coupon books for cash beginning May 1.

"That the books may be placed on sale during each working day of the month, between the hours of 8 a. m. and 1 p. m., and 3 to 7 p. m., and that such employes of the Mechanical Division as may be necessary be detailed for this purpose.

"That the books be issued on the basis of salaries and wages, and without regard to actual earnings and to the amount fixed by existing regulations. That a card of identification be issued to each employe at the time of delivering his pay receipt, or at such other time as may be more convenient to the Mechanical Division, this card to be good for one calendar month, a form to be printed on the back of the identification card authorizing a member of the employe's family to purchase books upon presenting the card to the issuing clerk. This plan includes the issuance of a card of identification, good during one month, for the purchase at any time during the month of all or any part of the maximum amount of books allowed. * * * * *

"Books to be sold only upon presentation of card by the employe or such member of his family as may be authorized by him, and are to be paid for in cash at the time of application and issue.

"That the issuing clerk be responsible to the Panama Railroad Company for coupon books and cash, and render reports and remit cash under such regulations as may be prescribed by the local Auditor.

"The issuing clerk shall keep a record of all books issued, separated between gold and silver employes and by denominations, showing the sales for each day separately, and maintaining memoranda of the issues by hours, and such other data as may be required from time to time by this committee. The Panama Railroad Company will furnish any information required by the committee, which is authorized to make such changes as may be found necessary during the three months' trial."

It is the opinion of this committee that it should be maintained throughout the three months to observe from time to time the operations, so that such difficulties as may develop or changes as may be found necessary can be given attention before any attempt is made to extend the "sales for cash" method throughout the work; and that it make further recommendation by July 1, 1911, as to the extension of the system.

Information in Regard to Arrival of Ships.

On days when Panama railroad ships are due to arrive at Cristobal, anyone who wishes information with regard to the hour of docking may procure it from any of the telephone exchanges. This arrangement has been made in order to relieve the wires from the extra work entailed by handling a large number of requests for information. The wireless station at Colon will furnish the various exchanges with the information as soon as it is received.

Civil Service Examinations.

Examination will be held, probably on April 30, for typewriter and stenographer, and typewriter in the Isthmian Canal service. Men only will be admitted, who are citizens of the United States and between the ages of 20 and 45 years.

Requests should be made at once for forms 304 and 1424, stating the name of the examination desired.

Care should be exercised in executing applications and they should be reviewed before filing. It is to be noted that *bona fide* residence must be shown to the date of application, and that such residence does not require continuous bodily presence, but refers to the place at which the applicant, if a voter, is legally entitled to exercise the right of suffrage.

Attention is directed to the fact that cards of admission are sent to all applicants for civil service examinations, if found eligible. No one should report at Culebra without such a card of admission, or at least before having ascertained the date on which an examination is scheduled to be held if no card has been received.

JOHN K. BAXTER,
Secretary, Isthmian Civil Service Board.

Culebra, April 14, 1911.

Odd Fellows.

In accordance with the proclamation of the Sovereign Grand Sire, the Odd Fellows have arranged for a meeting in commemoration of the ninety-second anniversary of the foundation of Odd Fellowship to be held at Cristobal Y. M. C. A. on Sunday, April 23, at 2.30 p. m.

All members of the order now in the Canal Zone are requested to be present, that we may in a fitting manner return thanks for the privileges we have enjoyed and the success and prosperity which have attended the acts of our beloved order during the past year.

This meeting will be open to the public and a cordial invitation is extended to all who are interested in the objects and work of the order to attend.

By order of the Sovereign Grand Sire.

J. P. MEADE,
Secretary, Cristobal Lodge No. 2.

Women's Clubs.

The last meeting for the year of the home department of the Cristobal Woman's Club was held in the clubhouse on Wednesday, April 12. The program consisted of selections by the Cecelian chorus, a vocal duet by Mrs. Frank Ullrich and Mrs. J. Diers, a piano solo by Mrs. Ullrich, and a lecture on Guatemala by the Rev. Edward J. Cooper, rector of Christ Church, Colon. Since the beginning of the club year in October, the home department has held a meeting on the fourth Wednesday in each month. Programs have been given at each meeting, among the topics being: "Vacation notes," "The duties of a hostess and the duties of the guest," "Tropical fruits and vegetables," "Cooking and housekeeping," and one afternoon was devoted to a discussion of the duties and amusement of young daughters in the family. Mrs. Charles B. Butters is the chairman and the department has 20 members.

At an election of officers held in the Pedro Miguel Woman's Club the following were chosen: President, Mrs. George Brown; vice-president, Mrs. Harry Girdner; secretary, Mrs. E. J. Brown; treasuer, Mrs. Williams. The fortnightly business meetings will be held as usual for the present. The next social meeting will be at the home of Mrs. W. H. Doyle on Wednesday, April 23.

The meeting of the Paraiso Woman's Club was held in the lodge hall on Wednesday, April 12. The current events program consisted of papers on the Mexican trouble, the famine in China, and the fortifications of Cape Henry. Members are assigned special topics at each meeting for the current events, and discussion follows the reading of each paper.

Obituary.

John S. Notte, employed by the Panama Railroad Company and living in Ancon, died at Ancon Hospital on April 13. He was 42 years of age, single, and had been on the Isthmus six years. His home was at West New Brighton, N. Y., where his mother is living.

Porto Bello Crusher.

A statement of the work done at the Porto Bello crusher, by days, for the week ending April 15, follows:

DATE.	Hours worked.	Cubic Yards.
April 10	6:43	2,302
April 11	7:29	2,367
April 12	7:20	3,307
April 13	7:00	3,154
April 14—Holiday.		
April 15	4:00	1,919
Total	32:32	13,049

Ancon Crusher.

A statement of the rock crushrd at Ancon quarry during the week ending April 15, follows:

DATE.	Hours worked.	Cubic Yards.
April 10	....	253
April 11	....	197
April 12	5:50	1,298
April 13	7:35	2,828
April 14—Holiday.		
April 15	8:20	2,375
Total	21:45	6,951

Crusher shut down, putting new eccentric into large crusher.

The next big shoot of the Culebra Gun Club will take place on Sunday morning, April 23. All members are requested to come early in order that shooting may begin at 9 o'clock.

WM. E. TRAGSDORF.

Married.

LOWE–HEGENER—At Cristobal, C. Z., on April 7, Estelle Sylvia Hegener of Cleveland, Ohio., to Grover Cleveland Lowe of Birmingham, Ala., the Rev. C. O. Purdy, officiating. Canal Zone residence, Las Cascadas.

A baseball game was played at Colon Park on April 14 between teams called the Commissary-Subsistence Regulars and the Commissary-Subsistence Outlaws, the Outlaws winning 10 to 9 in 11 innings.

The Corozal baseball team defeated the Commissary Outlaws at Ancon on Sunday, April 9, by a score of 5 to 4.

A concert will be given by the Isthmian Canal Commission Band at Culebra, C. Z., on Sunday, April 23, 1911, at 5.45 p. m.

A concert will be given at Cristobal on Sunday, April 30, 1911, at 4.30 p. m.

CANAL WORK IN MARCH.

Monthly Report of the Chairman and Chief Engineer to the Secretary of War.

CULEBRA, C. Z., April 14, 1911.

The Honorable the Secretary of War,
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of March, 1911:

Department of Construction and Engineering.

The following table summarizes the principal items of construction work accomplished by the Atlantic, Central, and Pacific Divisions during the month:

ITEM.	Unit.	Atlantic.	Central.	Pacific.	Total.
Work excavation, dry	Cubic yards	101,165	2,006,376	101,247	2,210,788
Work excavation, wet	Cubic yards	391,736	17,711	639,761	1,049,208
Total work excavation	Cubic yards	492,901	2,026,087	741,008	3,259,996
Plant excavation, dry	Cubic yards	3,713	6,436	....	10,149
Plant excavation, wet	Cubic yards	47,324	....	9,974	57,298
Total plant excavation	Cubic yards	51,037	6,436	9,974	67,447
Total Canal excavation	Cubic yards	543,938	2,032,523	750,782	3,327,443
Material placed in dams	Cubic yards	597,847	....	49,071	646,918
Concrete placed in locks and dams	Cubic yards	95,588	....	75,889	171,477
Explosives used	Tons (Gross)	93.23	272.95	38.69	404.87
Rock drilled	Feet	72,815	454,363	77,055	604,233
Tracks removed	Miles	....	21.89	....	21.89
New tracks laid	Miles	2.54	26.17	3.45	32.16
Rock crushed	Cubic yards	87,109	376	68,361	155,846
Cement used	Barrels	96,079	878	77,621	174,578
New roads built	Miles	.04	....	.66	.70
Water mains laid	Feet	4,478	965	4,737	10,180
Sewers laid	Feet	1,740	111	145	1,996
Open drains and ditches dug	Feet	28,102	150	818	29,070
Average daily force	....	6,967	8,645	4,349	19,961
Average rainfall	Inches	1.60	.41	.02	.54

Atlantic Division.

GATUN LOCKS.

Shovel excavation during the month was continued in the lower lock, and outside the Canal prism for the purpose of obtaining impervious material for back fill. A total of 62,211 cubic yards of material was removed. Of this amount 23,265 cubic yards were excavated for back fill. On March 31 the total material removed amounted to 5,791,075 cubic yards. The shovel excavation in the locks was 98.8 per cent completed, the channel excavation 90 per cent completed, and the excavation of the culvert trenches by crane, 65 per cent completed.

Back Fill—Back filling behind the walls of the upper locks was continued. The quantity placed during March aggregated 40,515 cubic yards, increasing the total to 346,575 cubic yards. On March 31 the back fill was 28.45 per cent completed.

Receiving and Issuing Material—The receipts of rock and sand during the month were satisfactory and exceeded the consumption. The amount of cement consumed exceeded the receipts by 34,265½ barrels.

Mixing and Placing Plants—Both plants and all portable mixers were kept in satisfactory operation during the month.

Power Plants and Pumps—The operation of the power plant and pumps was satisfactory and economical.

Iron and Steel Work—During the month the setting of steel for Stoney gate valves and hollow quoins was continued. A total of 447.4 tons of fixed steel was placed, exclusive of reinforcement.

Concrete Work—There was an increase of 14,780½ cubic yards in the amount of concrete laid as compared with the figures for the preceding month. The daily average for the 27 working days was 3,218 cubic yards, as compared with a daily average during February of 3,135 cubic yards. The total amount of concrete placed during the month was 86,884 cubic yards, including 5,697¾ cubic yards of large stone. The bucket measurement exceeded the place measurement by 572¼ cubic yards. Of the total concrete, 11,635 cubic yards were placed in the upper lock, 44,351 cubic yards in the middle lock, and 30,898 cubic yards in the lower lock. The concrete work for the entire lock system was 59.1 per cent completed at the end of March.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS, GATUN LOCKS.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)	12.06	8.50
Average number of hours per day worked per strand of cableway laying concrete and large stone (actual working time)	8.03	....
Average number of mixers per day	6.00	2.00
Average hourly output per mixer, (actual working time) cu. yds.	58.59	73.21
Average amount of concrete and large stone laid per hour, per strand of cableway, (actual working time) cu. yds.	34.61	....
Large stone laid, cu. yds	5,073½	624½
Concrete laid, cableways, cu. yds.	55,066	....
Concrete laid, through chute into dump cars, cu. yds	8,206	8,516
Concrete laid, crane and derrick, cu. yds.	....	8,104
Concrete laid, portable mixers	....	1,866½
Total amount concrete and large stone laid, cu yds.	68,345¼	19,111

Concrete from the auxiliary plant was placed by a crane, five derricks, and through a chute on the east bank of the lower lock into dump cars below and there distributed. This chute was put into operation the morning of March 6th.

GATUN DAM.

Construction during the month increased the total fill, as determined by cross sections of the material in place, by 597,847 cubic yards, making the total amount in place 12,873,925 cubic yards.

Hydraulic Fill—The dredges increased the hydraulic fill by 342,800 cubic yards. The total hydraulic fill in place on March 31 was 6,633,760 cubic yards.

Dry Fill—The material received from the Central Division and steam shovel No. 51, amounting to 255,047 cubic yards, was placed on the north and south toes of the dam, east and west of the spillway, making the total dry fill in place 6,240,165 cubic yards.

GATUN SPILLWAY.

Excavation—In preparing foundation of the spillway dam 1,010 cubic yards of rock were excavated by hand, increasing the total spillway excavation to 1,579,016 cubic yards.

Concrete—Construction work on the spillway dam was continued, and the concrete behind the east and west coffer-dams was practically completed to an elevation above ordinary floods. The amount of concrete placed during the month aggregated 8,704 cubic yards, which increased the total to 131,091 cubic yards.

HARBOR AND CHANNEL SECTION.

Excavation Below Sea-Level at Mindi—During the month three steam shovels removed 2,270 cubic yards of earth and 47,464 cubic yards of rock from the Canal prism. In addition, 9,055 cubic yards of earth were sluiced by pumping plant.

Dredging from the Ocean to Mindi—Five dredges removed 227,292 cubic yards of earth and 50,105 cubic yards of rock from the Canal prism. In addition, the dredge *Mindi* removed 30,889 cubic yards of earth from the channel between Dock 11 and Dock 14, and 17,435 cubic yards of earth in front of Dock 14. On March 31st, 40 feet of water could be carried from zero to zero plus 1,900 feet; 35 feet to mile 3 plus 200 feet; 30 feet to mile 3 plus 3,100 feet; 27 feet to mile 5 plus 2,438 feet, at the junction with the French canal.

Dredging from Mindi to Gatun Locks—The dredge *Sandpiper* removed 114,339 cubic yards of earth from the Canal prism betweeen mile 6 plus 3,130 feet and mile 6 plus 3,700 feet.

PORTO BELLO.

PERFORMANCE OF ROCK CRUSHER PLANT.

Length of working days—hours From 1st to 31st, inclusive	8.00
Average number of hours worked per day	6.98
Average number of cubic yards per hour of working day	403.30
Average number of cubic yards per working hour	462.30
Maximum day's output, (7 hours 16 minutes) cu. yds	3,737.00
Average day's output (27 days) cu. yds.	3,226.00
Average hourly output, (212 hours 34 minutes) cu. yds.	410.00
Total output for the month, cu. yds.	87,109.00

SAND, STONE, AND CEMENT SERVICE.

In connection with this service plant steamed 12,340 miles, handled 974 barges, and carried 2,560 passengers.

TORO POINT.

Colon Breakwater—45,483 cubic yards of material were excavated, of which amount 3,291 cubic yards were placed in track fill, and 42,192 cubic yards in breakwater fill. The double track trestle was extended 488 linear feet. On March 31 the trestle extended 3,598 feet from shore. The total amount of rock dredged and dumped on the west breakwater to March 1, 1911, was 469,288 cubic yards. During the month 50,105 cubic yards of rock were dredged and dumped, increasing the total to 519,393 cubic yards. The amount of dry fill placed to April 1 was 230,702 cubic yards.

NOMBRE DE DIOS.

During the month 109 barges containing 48,292 cubic yards of sand were shipped to Gatun.

MUNICIPAL ENGINEERING.

The reservoirs, water mains, sewers, roads, and oil pipe lines were maintained and extended as required, to facilitate construction work. Work was continued on the Colon municipal improvements.

Central Division.

During the month of March the total amount of material excavated in the Central Division was 2,032,523 cubic yards, of which 542,991 cubic yards were classified as earth and 1,489,532 cubic yards as rock. Of this quantity 1,961,204 cubic yards were removed by steam shovels, 8,508 cubic yards by scraper, 28,185 cubic yards by bucket cranes, and 9,170 cubic yards by hand. Contractors removed 17,711 cubic yards by sluicing, and 7,745 cubic yards by hand. Of the total, 1,990,650 cubic yards consisted of primary excavation for the Canal prism, 13,618 cubic yards permanent diversion, useful after the Canal is completed, and 21,819 cubic yards of silt deposited in completed sections of prism. The total work excavation amounted to 2,026,087 cubic yards. In addition, 5,596 cubic yards of gravel were excavated outside of the Canal prism for ballast and concrete use.

The daily average number of steam shovels at work during the month was 50.63, and the total number of shovel days was 1,367, as compared with 48.41 shovels at work during the month of February, with 1,114 shovel days.

For comparison with the work done by steam shovels during the corresponding month of the previous year, the following table has been prepared:

Period.	Excavated by shovels.	Classification of material.		Av. No. of shovels at work.	W'kg days.	Av. yards per shovel day.
		Rock.	Earth.			
1910:	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*			*C. Y.*
March	1,945,976	1,274,706	671,270	53.92	26	1,388.0
1911:						
March	1,961,204	1,478,558	482,546	50.63	27	1,434.7

Rainfall at Empire: 1910, 1.60 ins.; 1911, .20 ins.

The above table shows the average output per shovel to be 3.36 per cent greater in March, 1911, than in the corresponding month of the previous year.

The total amount of material excavated from the prism in the Culebra section of the Central Division in March, 1911, 1,715,130 cubic yards, was the highest record in that section for the month of March, the previous high record for the month having been March, 1910, when 1 502,868 cubic yards were removed.

The total estimated amount of material to be removed in the Central Division was 97,125,018 cubic yards, and up to April 1, 1911, 73,059 609 cubic yards had been removed leaving 24,065 409 cubic yards to be removed, in order to complete all excavation in the Central Division. From these figures it will be seen that 75.22 per cent of all excavation in the Central Division had been completed up to the close of the month of March, and 24.73 per cent remained uncompleted.

Considering the two sections which compose the Central Division, the excavation completed and that to be completed at the close of March operations was as follows:

CULEBRA SECTION.

	Cubic Yards.
Completed	61,400,413
To be completed	22,786,311

CHAGRES SECTION.

Completed	11,659,196
To be completed	1,279,098

From the above figures it will be seen that the Culebra section, locally known as Culebra Cut, was 72.93 per cent completed, with 27.07 per cent to be completed; the Chagres section was 90.11 per cent completed, with 9.89 per cent to be completed.

During the month 20,140 cubic yards of material were hauled from the Canal prism and dumped in the embankment for the roadbed of the relocated Panama railroad in the vicinity of Pedro Miguel. The total amount of spoil from the Central Division used for this purpose at the close of the month was 3,763,494 cubic yards. The Central Division also delivered at Gatun 241,266 cubic yards of rock and earth for use in the construction of the dam, making the total for this purpose at the end of March 3,147,800 cubic yards. In addition, the Central Division delivered 27,740 cubic yards of rock and earth to the Pacific Division to be used as back fill for the lock at Pedro Miguel.

The daily average number of laborers at work on the whole division during the month was 7,738, and the daily average number of gold employes 907.

Pacific Division.

DISTRICT NO. 1—LOCKS AND DAMS.

Excavation—The total excavation during the month amounted to 101,247 cubic yards.

Filling and Embankment—During March no additional dry filling was added to the prism of the west dam at Pedro Miguel, the total amount of material in place remaining at 260,852 cubic yards, as previously reported. The back fill at Pedro Miguel was increased by 90,097 cubic yards, the total in place at the end of the month amounting to 188,655 cubic yards.

At Miraflores, 23,940 cubic yards were added to the dry fill in the toes, and 25,131 cubic yards to the hydraulic fill in the core of the west dam, making the totals at the end of the month 690,892 cubic yards and 496,421 cubic yards, respectively. No material was added to the back fill during the month, leaving the amount in place as previously reported, 135,885 cubic yards.

PEDRO MIGUEL LOCKS.

The back filling of the west wall was continued, and filling behind the east wall was commenced. The dismantling of berm crane "G" was continued. During the month the amount of iron placed aggregated 761,746 pounds.

Concrete Work—The total amount of concrete and large stone laid at Pedro Miguel was 44,716 cubic yards, as compared with 37,011 cubic yards during February. The concrete was placed as follows: 14,680 cubic yards in the west wall; 20,429 cubic yards in the center wall; and 9,607 cubic yards in the east wall.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT PEDRO MIGUEL.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)	*8.00	8.00
Average number of hours per day, per unit, worked laying concrete and large stone (actual working time)	5.44	6.06
Average number of mixers per day	2.00	3.89
Average hourly output per mixer (actual working time)	*Cu. Yds.* 63.38	*Cu. Yds.* 37.03
Average amount of concrete and large stone laid per hour, per chamber crane (actual working time)	58.30	....
Large rock laid	....	1.00
Concrete laid	34,338.00	10,377 00
Total concrete laid	34,338.00	10,378.00

*12 hours per day for 9 days.

Auxiliary plant consists of three 2-cubic yard mixers and one ½-yard mixer, averaging 3.81 mixers per day. Placing plant consists of locomotive cranes and derricks, averaging 1.81 units per day and ½-cubic yard mixer dumping directly into forms.

MIRAFLORES LOCKS.

The erection of berm crane "H" at Miraflores was completed, and berm crane "F" was completed with the exception of adjusting the machinery. During the month the amount of iron placed aggregated 38,550 pounds. The excavation of rock in the lower lock site was continued, and the filling of the dike at the Agua Dulce pumping station completed.

Concrete Work—The total amount of concrete and large stone laid was 31,173, as compared with 20,896 cubic yards during February. The concrete was placed as follows: 4,182 cubic yards in the west wall; 6,913 cubic yards in the center wall; 19,264 cubic yards in the east wall; and 814 cubic yards in the floors.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT MIRAFLORES.

	Permanent Plant.*	Auxiliary Plant †
Length of working day (hours)	8.00	8.00
Average number of hours per day per unit, worked laying concrete and large stone (actual working time)	2.84	6.16
Average number of mixers per day	.33	8.22
Average hourly output per mixer (actual working time)	*Cu. Yds.* 31.28	*Cu. Yds.* 24.59
Average amount of concrete and large stone laid per hour per chamber crane (actual working time)	53.89	....
Large stone laid	28.08	215.00
Concrete laid	4,108.00	26,822.00
Total concrete laid	4,136.00	27,037.00

*One berm crane operating boom 4 days; one berm crane complete operating 9 days.

†Eight ½-cubic yard mixers and one ¾-cubic yard mixer, averaging 6.22 mixers per day; two 2-cubic yard mixers. Placed by dump cars or dumped directly into forms.

DISTRICT NO. 2—DREDGING.

The following is a statement of the output of the five dredges which were in operation during the month, and the amount of material excavated hydraulically:

DREDGE.	Type.	WORK.		PLANT.		Total.	Remarks.
		Earth.	Rock.	Earth.	Rock.		
		Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*	
Cardenas	Dipper	55 861	22,450	2,700	....	81,011	Place measurement
Marmot	Ladder	102,892	....	....	....	102,892	Place measurement
Mole	Ladder	7,085	4,141	....	....	11,226	Place measurement
Badger	Ladder	121,615	....	....	....	121,615	Place measurement
Culebra	Suction	233,760	....	9,974	....	243,734	Scow measurement
Total	....	521,213	26,591	12,674	....	560,478	
Hydraulic excavation	....	*91,957	....	....	....	91,957	Place measurement
Grand Total	....	613,170	26,591	12,674	....	652,435	

*Excavated from canal prism south of Miraflores lock site.

CHAMÉ SAND EXCAVATION.

Approximately 45,100 cubic yards of sand were excavated at Punta Chamé and delivered at Balboa.

DISTRICT NO. 3—MUNICIPAL AND SANITARY ENGINEERING.

The reservoirs, water mains, sewers, roads, and oil pipe lines were maintained and extended as required, to facilitate construction work. Work was continued on the municipal improvements in the city of Panama.

DISTRICT NO. 4—ANCON QUARRY.

PERFORMANCE OF ROCK CRUSHER PLANT.

	Hours.
Length of working day	12:00
Average number of hours per day (actual working time)	8:89
	Cu. Yds.
Average amount crushed per hour of working day	210.99
Average amount crushed per working hour	284.79
Total output for the month	68,361.00

Relocation of Panama Railroad.

During the month 403,543 cubic yards of material were excavated, increasing the total excavation at the close of the month to 6,271,494 cubic yards, and 448,434 cubic yards of material were placed in embankment, increasing the total for this purpose to 11,698,838 cubic yards.

For comparison with the work done by steam shovels during the preceding month, and during the corresponding month of the previous year, the following table has been prepared:

Relocation of Panama Railroad.

Period.	Excavated by shovels.	Classification of material.		Av. No. of shovels at work.	W'kg days.	Av. yards per shovel day.
		Rock.	Earth.			
1910:	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*			
March.	236,531	85,761	150,770	7.31	26	1,245
1911:						
Feb.	256 615	180,600	76,015	6.22	23	1,795
March.	325,295	250,505	74,790	7.04	27	1,712

During the month 2,320 feet of temporary trestle were driven, and work on bridges and culverts was continued. No permanent track was laid during the month, the total of 70-pound and 90-pound permanent track remaining at 157,744 linear feet and 18,997 linear feet, respectively, as previously reported. During the month the track connecting the Gold Hill line with the Obispo diversion track south of Empire bridge was completed, and track laid southward on the former line over the Continental divide into the head of the Pedro Miguel valley. All culvert work north of the Rio Sardinilla was completed, and construction commenced on the culvert at the Rio Obispo. The force averaged 2,372 men, in addition to those employed by the contractors.

Quartermaster's Department.

Labor—The laborers whose services were no longer required by the Central Division in the Chagres district, by reason of the completion of certain portions of the work in that district, were given employment on the relocation of the Panama railroad.

Building—The work of moving six cottages at Culebra was completed during the month. A considerable amount of work was performed in connection with the alterations necessary to create additional accomodations at the Hotel Tivoli.

Materials and Supplies—The work of turning in surplus supplies and concentrating stock was continued. During the first three months of the year approximately $300,000 worth of material was turned in from the line storehouses to the Mount Hope depot. The stocks in the line storehouses are being materially reduced.

The amount of material ordered last month was in excess of that for the previous month, the increase being due to the large orders placed for lock material, aggregating nearly $1,000,000 for the Atlantic and Pacific Divisions.

Subsistence Department.

The operation of the European laborers' messes, the colored laborers' kitchens and the line hotels showed a net profit of $94,148.55. The operation of the Hotel Tivoli showed a net profit of $8,193.02, and there was a net profit on restuarants, penitentiary and dredges of $202.33. The net profit on subsistence operations was $12,543.90.

Department of Civil Administration.

COURTS.

During the month four civil and 25 criminal cases were disposed of in the Circuit Courts, and 75 civil and 441 criminal cases in the the District Courts.

DIVISION OF POSTS, CUSTOMS AND REVENUES.

Money order sales for the month of March amounted to $494,136.65, and the fees to $2,183.63. Receipts from stamp and card sales and newspaper postage aggregated $8,339.03. The total collection of revenues made by the division was $23,750.27, and the collections on account of court fines, costs and fees, $2,330.82.

Twenty-six vessels entered at and 25 vessels cleared from the port of Ancon, and 23 vessels entered at and 22 vessels cleared from the port of Cristobal.

DIVISION OF POLICE AND PRISONS.

The total number of persons arrested was 442, of whom 389 were men and 53 women. Forty-six nationalities were represented. The total number of arrests for the month was a decrease of 44, as compared with February. Ten convicts were committed to the penitentiary, and 12 were discharged, leaving 137 in confinement at the close of the month. The cost of guarding and subsisting the convicts was $2,544.90, and the value of their work on the Canal Zone roads $2,364.80.

DIVISION OF FIRE PROTECTION.

Eighty-four fires were reported in the Canal Zone during the month, an increase of 57, as compared with February. The large number of fires was due to the excessively dry weather conditions prevailing at this time of the year, and is accounted for in particular by the numerous small grass fires along the line of the railroad caused by sparks from locomotives, there being 50 during the month attributable to this cause. On March 23, one of the most disastrous fires since American occupation swept Colon. Nine Commission buildings were consumed, the Chief Quartermaster's estimate placing the loss at $14,394.93.

DIVISION OF PUBLIC WORKS.

In the city of Panama the average daily consumption of water was 1,370,771 gallons, and in Colon 914,982 gallons.

The usual inspection and maintenance work of this division was performed during the month.

DIVISION OF SCHOOLS.

The total enrolment in the white schools during the month was 1,089 and the average daily attendance 864.6, or 79 per cent of the enrolment; and in the colored schools the total enrolment was 1,418 and the average daily attendance 658.2, or 46 per cent. Forty-two white and 25 colored teachers were employed in the division on March 31.

Department of Sanitation

The total number of deaths from all causes among employes was 43. These were divided as follows: From disease 27, and from violence, 16, giving the annual average per thousand of 6.76 and 4.00, respectively.

The annual average death rate per thousand among employes for the month of March in previous years since American occupation, was as follows:

1905	12.27
1906	37.44
1907	40.23
1908	12.47
1909	8.76
1910	8.91

The annual average death rate per thousand in the cities of Panama, Colon, and the Canal Zone, including both employes and non-employes, was 22.22.

The annual average death rate per thousand for the month of March among the same class of population for previous years, was as follows:

1905	36.51
1906	46.72
1907	32.32
1908	20.67
1909	17.07
1910	18.33

Segregating the whites from the blacks, the annual average death rate per thousand from disease among employes was, for whites, 3.38; blacks, 7.76, giving a general average of 6.76. For the same month during 1909, the annual average death rate per thousand from disease was, whites, 3.90; blacks, 7.99, giving a general average of 6.84, and for the same month during 1910, whites, 3.89; blacks, 5.87, giving a general average of 5.39.

Among employes during March, 1911, deaths from the principal diseases were as follows: Chronic nephritis, 1; dysentery, 2; malaria, 2; lobar pneumonia, 7; and tuberculosis, 7, leaving a balance of 8 deaths from all other diseases, and 16 deaths from external violence.

No cases of yellow fever, small-pox, or plague were brought to or originated on the Isthmus during the month.

Respectfully,
Geo. W. Goethals, *Chairman.*

Half a Million in Money Orders—Internal Revenues.

The report of the Director of Posts for the month of March shows that 20,095 money orders were issued, amounting to $495,991.18. This was the record month in amount issued, the previous high record was that of March, 1910, when orders to the value of $481,515.67 were issued. Of the $495,991.18 issued last month, $369,546.23 was payable in the United States, $125,491.45 in the Canal Zone, $943.50 in Martinique, and $10 in Costa Rica. The fees collected amounted to $2,188.93, and the amount paid and repaid during the month was $128,436.77.

Postal sales during the month amounted to $8,335.88, and newspaper postage amounted to $3.15.

The revenue collections for the month were as follows:

Distillation licenses	$246.61
Insurance company's fees	129.89
Motor vehicle licenses	37.00
Taxes, license, etc	13,060.72
Total	$13,474.22

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

A lecture on the cruise of the Atlantic battleship fleet around the world will be delivered at the various clubhouses by Franklin Matthews, a newswriter for 18 years on the staff of the New York Sun. He was one of the two civilians allowed to make the cruise with the fleet, and his lecture is an account of the life of the fleet as well as of the countries visited. The schedule of lectures follows: Gatun, April 20; Culebra, April 21; Pedro Miguel, April 22; Porto Bello, April 24; Corozal, April 26; Empire, April 27; Cristobal, April 28; Gorgona, April 29.

COROZAL.

A men's smoker will be held on Thursday evening, April 20. Both members and non-members are invited.

The Corozal indoor baseball team will play at Empire on Saturday evening, April 22.

CULEBRA.

The duckpin bowling league games opened on Saturday night, April 15, with Culebra teams rolling at Empire and Culebra. The results of the match on the Culebra alleys are as follows:

Culebra.				Empire.			
Kersey.....	97	90	85	Davis.....	87	87	84
Conlan.....	82	76	88	Pinney....	88	78	80
Fox........	88	78	78	Witmer...	81	86	85
Mengel.....	89	86	84	Leon......	93	95	84
Hurst......	92	77	84	Henry....	84	98	106
Total.....	448	407	419	Total...	433	444	439

The following are the latest moves in the chess game "by wireless" between Culebra and Porto Bello:

Porto Bello.	Culebra.
6. P X P	6. B—Kt5 ch.
7. B—Q2	7. B takes B, ch.
8. QKt takes B	8. P—Q4
9. P takes P	9. K Kt takes P

The Culebra Boy Scouts took a Sunday afternoon "hike" to Las Cascadas plantation directed by W. R. McCann.

EMPIRE.

A farewell smoker was held on Saturday, April 15, in honor of W. W. Warwick and F. W. Miracle, who have been members of the Empire council for several years past. After an hour's entertainment of magic by Prof. Kellermann, there were speeches by Messrs. Warwick and Miracle, an address by Judge Brown of Cristobal, and remarks by Messrs. Freeman and Dickson. There was music by an orchestra.

The Hon. Maurice H. Thatcher delivered an address under the auspices of the Canal Zone Sunday School Association at the clubhouse on Friday evening, April 14.

The following high scores were bowled during the past week: Parkis, 102, 101; Mason, 105; Gustavson, 100, 101; Giavelli 101, 104; Gorham, 108; Witmer, 106, 102; Pearsou, 100; Reed, 104.

Culebra defeated Empire at Empire in the first series of duckpin league games on Saturday evening, April 15, by the following scores:

Empire				Culebra.			
Gustavson...	88	95	92	Frederick..	88	95	92
Gorham....	86	76	81	Huttle....	94	92	96
Potter......	88	82	75	Judge.....	77	82	78
Pearson.....	91	81	91	Hill.......	82	95	86
Huson......	72	86	97	Case......	105	102	85
	425	420	436		446	465	428

GORGONA.

A. A. Simka will deliver an illustrated lecture on "The Holy Land" on Sunday night, April 23. Mr. Simka made an extended tour of the Holy Land and will talk on his experiences while there.

C. M. Benson led the discussion club on Wednesday night, April 13. His topic was "Should immigration to the United States be restricted."

All mechanics wishing to become acquainted with the Westinghouse air brake E. T. equipment should communicate with the secretary of the Y. M. C. A., Gorgona. Classes for the study of air brake practice will be started in Las Cascadas and Pedro Miguel if there are enough applicants.

Gatun and Gorgona will play indoor baseball at Gorgona on Saturday night, April 22.

GATUN.

The pool match between DePoorter of Gatun and Hirsh of Empire resulted in favor of DePoorter, the final score being DePoorter 300; Hirsh, 276. In the early part of the game Hirsh was 72 balls in the lead. DePoorter by winning this match retains the championship of the Isthmus and will receive a specially designed medal. Hirsh made five 15-ball runs during the last half of the match at Gatun.

The "Life problems club" discussed "The family and the home" at its meeting on Sunday evening, April 16. Those participating were Messrs. Purdy, Smith, Wood, Hughson and Wilson. The subject for April 23 will be "Marriage and divorce."

A special committee representing the Red Cross Society met at the clubhouse on Saturday evening and planned an entertainment, the funds of which will go toward the two million dollar endowment.

The game of indoor baseball at Gatun on April 15 resulted in the score: Empire, 46; Gatun, 19.

Henry Hughson gave a talk on the "History of Money" in the game room on Friday evening, April 14.

Mr. Fox presided at the meeting of the literary club, in the absence of President Young, on Wednesday evening, April 12. Mr. Young of Empire sang two baritone solos and Mr. McAnelly played several piano selections. In the debate on "Election of United States Senators", Mr. Shafer upheld the affirmative, and Mr. Philips the negative. Messrs. Gilkie, Young, Carr, Smith and Hughson also took part. Mr. Critchlow read a paper on "The cause and recording of earthquakes." The election of officers resulted as follows: President, Mr. Wantland; vice-president, Mr. Chatfield; secretary, Mr. Cotton; program committee, Messrs. Smith, Critchlow, and Shafer.

CRISTOBAL.

In the opening of the Isthmian Duckpin League with Gatun on Saturday night, April 15, Cristobal won two out of three games.

In the local duckpin league the 100, or over, scores were made during the week ending April 15, by Harrington, 102; DeCora, 110, 107; Sullivan, 104.

At a meeting of the bowlers eligible for the Isthmian Duckpin League, Adams and Rosteck were elected captains of the two teams, composed of the following men: Adams' team—DeCora, Sullivan, Herring, Jacques, Smith, Thompson, Rabbitt, French, Bullard. Rosteck's team—Louch, Howard, Barrett, Claherty, Harrington, Beck, Furlong, Blackburn, Gibson.

In the duckpin tournament the games won are as follows: Commissary-Subsistence, 28; Quartermasters, 23; Miscellaneous, 23; Dry Dock, 10.

A handicap pool tournament will be started on April 24 with the following men entered: Thomas, Chambers, Wempe, Glick, Jamieson, Benson, Cleall, Schlager, DeCora, Prados, Ford, Jarboe.

At a special Good Friday service the Rev. Carl H. Elliott spoke on "The badge of royalty," and special music was furnished by the Panama railroad orchestra.

The moving pictures which were to have been here on Monday, April 10, did not arrive. In the near future an evening of moving pictures will be given, showing scenes from life on the Isthmus, interspersed with comic scenes.

Preliminary steps were taken at a meeting on Wednesday night, April 12, to organize a debating club which will take up at its meetings topics under discussion at the present time.

Gorgona won the indoor baseball game in the league series on Saturday night by the score of 23 to 9. The batteries were: Gorgona—Weiser and Ridge; Cristobal—Russell and MacSparren.

The Easter cantata "Easter Angels" as sung by the Union Church choir on Easter Sunday will be repeated at a morning service at the clubhouse on April 23. There will also be a short talk and general singing.

Rainfall from April 1 to 15, Inclusive.

STATIONS.	Maximum in one day	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon..........................	.76	4	1.86
Balboa..........................	1.31	4	2.46
*Miraflores....................	1.05	4	1.74
Pedro Miguel....................	1.44	8	2.61
Rio Grande......................	2.29	8	2.92
Central Section—			
Culebra.........................	1.03	8	1.39
*Camacho........................	1.14	8	2.33
Empire..........................	.57	8	.87
Gamboa..........................	.76	8	1.12
*Juan Mina......................	.36	8	.46
Alhajuela.......................	.81	8	.86
*El Vigia.......................	.37	8	.54
*Gorgona........................	1.40	7	2.22
San Pablo.......................	1.32	8	2.17
Tabernilla......................	2.08	8	3.47
Bohio...........................	1.68	12	3.16
*Monte Lirio....................	1.10	12	3.01
Atlantic Section—			
Gatun...........................	.76	12	1.54
*Brazos Brook...................	.43	8	1.54
Cristobal.......................	.67	12	1.63
Porto Bello.....................	.43	12	†1.53
*Nombre de Dios.................	.87	4	3.21

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

†To 5 p. m., April 14.

OFFICIAL CIRCULARS.

Seeing the Canal.

CULEBRA, C. Z., April 12, 1911.

CIRCULAR No. 382:

If visitors to the Isthmus who wish to inspect the Canal will communicate in advance with the Secretary to the Chairman, Culebra, C. Z., a representative will be detailed to conduct them to the points of greatest interest and explain the most prominent features of the work, according to the following schedule:

Monday, a. m.—The locks at Pedro Miguel.

Wednesday, a. m.—The models and relief maps in the office of the Chairman and Chief Engineer at Culebra, and the Culebra Cut.

Friday, a. m.—The locks and dam at Gatun.

Saturday, a.m.—The models and relief maps in the office of the Chairman and Chief Engineer at Culebra, and the Culebra Cut.

Saturday, p. m.—The locks and dam at Gatun.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Report of Unsatisfactory Work.

CULEBRA, C. Z., April 17, 1911.

CIRCULAR No. 384:

All work of an unsatisfactory character peformed for one department or division (including the Panama Railroad Company) by another shall hereafter be reported to this office on Form C. E. 298, which has been provided for this purpose, in duplicate.

Stock of Form C. E. 298 has been ordered printed, and necessary supply may be obtained from the Depot Quartermaster on requisition in the usual manner.

It is expected that before forwarding the report the head of the department or division will make such examination as will assure him of the correctness thereof.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Slaughter of Animals for Food.

ANCON, C. Z., April 6, 1911.

Until further orders, all individuals, firms, or companies, slaughtering beeves, sheep, hogs, or goats within the limits of the Canal Zone, will be required to secure a permit for each animal slaughtered from the district physician of the station where the killing is to be done. The application for the permit must specify the time and place, when and where the animal is to be slaughtered.

The district physician will be present when the carcasses are opened and satisfy himself that the animals did not have anthrax or any other infectious disease. Should the characteristic lesions of an infectious disease be found in any animal, the district physician is instructed to thoroughly disinfect the floor of the slaughter house and see that the sanitary inspector of the district at once thoroughly burns up the entire carcass together with the hide and offal of any animal so infected.

Persons slaughtering any of the above-mentioned animals within the Canal Zone, without complying with the provisions of this circular, shall be subject to criminal prosecution as provided for by law.

Adopted by the Board of Health, the 6th day of April, 1911.

W. C. GORGAS,
Chief Sanitary Officer and Chairman Board of Health.

Approved: GEO. W. GOETHALS,
Chairman and Chief Engineer.

Acting Chief Clerk, Mechanical Division.

GORGONA, C. Z., April 11, 1911.

ALL CONCERNED:

During the absence of Mr. William Taylor on leave, Mr. H. C. Dew will, in addition to his regular duties, act as Chief Clerk of the Mechanical Division.

A. L. ROBINSON,
Superintendent, Mechanical Division.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending April 26, 1911 (75th meridian time):

DATE.	Low.	High.	Low.	High.	Low.
	A. M.	A. M.	P. M.	P. M.	P. M.
April 20........	1.55	7.53	2.15	8.01	......
April 21........	2.40	8.38	3.06	8.50	......
April 22........	3.36	9.38	4.13	9.58	......
April 23........	4.41	10.50	5.28	11.20	......
		Noon			
April 24........	5.57	12.00	6.32	......	......
		A. M.	A. M.		
April 25........	......	12.31	6.54	12.58	7.25
April 26........	......	1.29	7.45	1.50	8.13

LOST—At Empire, in or near circus grounds, on Saturday night, April 15, an oval shaped locket set with one large amethyst and six pearls; baby's picture inside. Return to Mrs. H. F. Stevens, house No. 143, Empire.

COMMISSARY DEPARTMENT.

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning April 18.

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	6
Shoulder, neck trimmed off, (4 pounds and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg, (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing, per pound	10
Shoulder, for roasting (not under 4 pounds), per pound	12½
Chops—Shoulder, per pound	16
Chops, per pound	24
Loin for roasting, per pound	24
Cutlets, per pound	28
Pork, loin chops or roast, per pound	14
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	8
Corned, per pound	12, 14, 16
Chuck roast (3 pounds and over), per pound	12
Pot roast, per pound	12½
Rib roast, second cut (not under 3½ pounds), per pound	16
Rib roast, first cut (not under 3 pounds), per pound	18
Sirloin roast, per pound	19
Rump roast, per pound	19
Porterhouse roast, per pound	20
Steak, chuck, per pound	12½
Round, per pound	13
Rib, per pound	18
Sirloin, per pound	19
Rump, per pound	19
Porterhouse (not less than 1½ pounds), per pound	20
Tenderloin (Western) per pound	24
Tenderloin (Native), per pound	30

MISCELLANEOUS.

Caviare, Russian in ½-lb. jars, per jar	85
Livers—Beef, per pound	7
Calf, each	60
Half, each	30
Sausage—Pork, per pound	15
Bologna, per pound	10
Frankfurter, per pound	12
Lieberwurst, per pound	10
Sweetbread —Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	23
½-dozen, only	12
Bluefish, fresh, per pound	14
Halibut, fresh, per pound	15
Oysters in ½-gallon kegs, keg	1.00

POULTRY AND GAME.

Chickens—Fancy roasting, milk fed, large, each	1.25
Fancy roasting, milk fed, med., each	1.00
Fancy roasting, corn fed, about 4½ pounds, each	90
Fowls, each	60, 70, 80, 90, 1.00
Ducks, Western, about 4½ pounds, each	1.00
Long Island, each	1.30
Ducks, Long Island, each	1.10
Broilers,, milk fed, each	60
corn fed, each	55
Turkeys, per pound	26
Squabs, each	35
Capons	2.10
Rabbits, dressed, each	40
Pheasants, each	50
Partridges, each	50
Grouse, each	50

CURED AND PICKLED MEATS.

Ham—German, Westphalia, per pound	36
Sugar cured, per pound	18
Sliced, per pound	20
Half, for boiling, per pound	19
Boiled, per pound	25
Hocks, per pound	18
Picnic, Winchester, per pound	15
Bacon—Breakfast, whole piece, per pound	23
Breakfast, sliced, per pound	24
Beef, salt, family, per pound	9½
Pork, salt family, per pound	14
Ox Tongues each	75
Pigs' feet, per pound	9
Tongues, per pound	14
Sliced bacon in 1-pound tins, per tin	30
In 1-pound jars, per jar	30

DAIRY PRODUCTS.

	Price.
Butter—Creamery special, per pound	32
Cheese—Roquefort, per pound	38
Philadelphia cream, small cake	10
large cake	18
Cheese—Young America, per pound	18
Swiss, per pound	26
Edam, each	1.00
Camembert, in large tins, tin	38
Camembert, in small tins, tin	14
Neufchatel, cake	6
Gouda, per pound	34
Milk (Inspected or certified), per bottle	**25
(Pasteurized), bottle	**18
Buttermilk, bottle	**15
Ice cream, quart	‡25
½-gallon	‡50

VEGETABLES AND FRUITS.

Beets, per pound	3
Celery, per head	*8
Carrots, per pound	3
Cabbage, per pound	3
Cucumbers, per pound	10
Kale, per pound	5
Lettuce, per pound	*10
Onions, per pound	*5
Potatoes, white, per pound	2½
sweet, per pound	2
Parsnips per pound	3
Romaine, per pound	10
Spinach, per pound	8
Squash, per pound	6
Tomatoes, per pound	*7
Turnips, per pound	3
Yams, per pound	3
Apples, fancy table, per pound	†10
Grapefruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12
Pineapples, each	20

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*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal and Colon during the week ending April 15, 1911:

Moldegaard, April 8, from Brunswick, with 41,800 pieces cross ties for stock

Prinz Eitel Friederich, April 9, from New York, with 200 barrels crude carbolic acid for stock.

Oruba, April 9, from New York, with 59 cases paper for stock.

Wanderer, April 11, from Liverpool, with 12 pieces dredge buckets for Pacific Division.

Turrialba, April 13, from New Orleans, with 34 crates library paste, 706 pieces lumber, 400 sacks bran for stock; 395 pieces creosoted lumber for Atlantic Division; 8 pieces dipper lips for Central Division.

Advance, April 13, from New York, with 100 cases soap, 5 cases pitchers, 117 barrels fire brick, 34 barrels rosin; 8 casks china, 5 cases paints for stock; 8 cases coupon books for Examiner of Accounts; 13 barrels tower locks for Mechanical Division; 9 cases rubber sleeves for Atlantic Division; 6 pieces castings, 20 pieces cable chains for Central Division; and a miscellaneous cargo, the whole consisting of 363 packages, weighing 134 tons.

Almirante, April 14, from New York, with 13 cases brooms, 185 coils rope for stock; 5 cases electrical material for Atlantic Division.

The following vessels arrived at and departed from the port of Balboa during the week ending April 15:

Arrivals—April 8, *Barracouta*, from Central American ports; April 10, *Mackinaw*, from San Francisco; *Ucayali*, from Callao; April 11, *City of Panama*, from San Francisco; April 12, *Huasco*, from Valparaiso; April 13, *Pennsylvania*, from San Francisco; April 14, *Chile*, from *Guayaquil*; April 15, *Rupanco*, from Columbian ports; *Quito*, from Buenaventura.

Departures—April 9, *San Juan* to San Francisco; April 10, *Guatemala*, to Callao; April 11, *Peru*, to Guayaquil; April 13, *Barracouta*, to Central American ports.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, April. 15, 1911. All heights are in feet above mean sea level.

DAY AND DATE.	STATION.				
	Vigia.	Alhajuala	Gamboa.	Bohio.	Gatun Lake.
Sun. April 9	126.2	92.8	45.3	12.4	12.4
Mon. April 10	126.3	92.8	45.2	12.4	12.4
Tues. April 11	126.2	92.8	45.4	12.5	12.5
Wed. April 12	131.5	96.4	45.4	12.6	12.6
Thurs. April 13	130.6	96.4	49.0	13.4	13.1
Fri. April 14	129.6	95.2	48.1	13.2	13.2
Sat. April 15	127.9	94.4	48.1	13.6	13.4
Height of low water	125.0	92.0	44.0		

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Cristobal	P. R. R.	Tuesday	April 18
Ancon	P. R. R.	Monday	April 24
Allianca	P. R. R.	Saturday	April 29
Colon	P. R. R.	Saturday	May 6
Advance	P. R. R.	Friday	May 12
Panama	P. R. R.	Thursday	May 18
Allianca	P. R. R.	Wednesday	May 24
Colon	P. R. R.	Wednesday	May 31
Advance	P. R. R.	Tuesday	June 6
Panama	P. R. R.	Monday	June 12
Allianca	P. R. R.	Saturday	June 17
Colon	P. R. R.	Saturday	June 24
Advance	P. R. R.	Friday	June 30

CRISTOBAL TO NEW YORK.

Panama	P. R. R.	Tuesday	April 25
Cristobal	P. R. R.	Tuesday	May 2
Ancon	P. R. R.	Monday	May 8
Allianca	P. R. R.	Friday	May 12
Colon	P. R. R.	Thursday	May 18
Advance	P. R. R.	Wednesday	May 24
Panama	P. R. R.	Wednesday	May 31
Allianca	P. R. R.	Tuesday	June 6
Colon	P. R. R.	Tuesday	June 13
Advance	P. R. R.	Sunday	June 18
Panama	P. R. R.	Saturday	June 24
Allianca	P. R. R.	Friday	June 30
Colon	P. R. R.	Thursday	July 6
Advance	P. R. R.	Wednesday	July 12

NEW YORK TO COLON.

Metapan	U. F. C.	Thursday	April 20
Prinz Joachim*†	H.-A.	Saturday	April 22
Zacapa	U. F. C.	Thursday	April 27
Prinz Eitel Friedrich	H.-A.	Friday	April 28
Clyde	R. M.	Saturday	April 29
Almirante	U. F. C.	Thursday	May 4
Prinz Aug. Wilhelm*	H.-A.	Saturday	May 6
Santa Marta	U. F. C.	Thursday	May 11
Prinz Sigismund	H.-A.	Friday	May 12
Thames	R. M.	Saturday	May 13
Metapan	U. F. C.	Thursday	May 18
Prinz Joachim*†	H.-A.	Saturday	May 20

COLON TO NEW YORK.

Almirante	U. F. C.	Thursday	April 20
Prinz Aug. Wilhelm*	H.-A.	Tuesday	April 25
Santa Marta	U. F. C.	Thursday	April 27
Prinz Sigismund	H.-A.	Tuesday	May 2
Thames	R. M.	Tuesday	May 2
Metapan	U. F. C.	Thursday	May 4
Prinz Joachim*	H.-A.	Tuesday	May 9
Zacapa	U. F. C.	Thursday	May 11
Prinz Eitel Friedrich	H.-A.	Tuesday	May 16
Trent	R. M.	Tuesday	May 16
Almirante	U. F. C.	Thursday	May 18
Prinz Aug. Wilhelm*	H.-A.	Tuesday	May 23

NEW ORLEANS TO COLON.

Heredia	U. F. C.	Wednesday	April 19
Atenas	U. F. C.	Saturday	April 22
Cartago	U. F. C.	Wednesday	April 26
Turrialba	U. F. C.	Saturday	April 29
Parismina	U. F. C.	Wednesday	May 3
Abangarez	U. F. C.	Saturday	May 6
Heredia	U. F. C.	Wednesday	May 10
Atenas	U. F. C.	Saturday	May 13

COLON TO NEW ORLEANS.

Turrialba	U. F. C.	Thursday	April 20
Parismina†	U. F. C.	Thursday	April 20
Abangarez	U. F. C.	Thursday	April 27
Heredia†	U. F. C.	Thursday	April 27
Atenas	U. F. C.	Thursday	May 4
Cartago†	U. F. C.	Thursday	May 4
Turrialba	U. F. C.	Thursday	May 11
Parismina†	U. F. C.	Thursday	May 11
Abangarez	U. F. C.	Thursday	May 18
Heredia†	U. F. C.	Thursday	May 18

COLON TO BARBADOS, CALLING AT TRINIDAD.

Magdalena	R. M.	Tuesday	April 25

Hamburg-American steamers leave Colon for New York via Kingston every Tuesday at 10 a. m., and those designated (*) call at Santiago, Cuba; for Bocas del Toro and Port Limon on alternate Wednesdays, by ships designated (*†).

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships designated (†) for New Orleans via Port Limon and Puerto Barrios on Thursday at 4 p. m.; ships for New York via Kingston on Thursday at 11 a. m.; for Bocas del Toro on Monday at 6 p. m.

The Leyland Line ship *Californian* will sail from Colon for New Orleans via Port Limon on April 21.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, APRIL 26, 1911. No. 35.

The Canal Record

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Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Chagres Section Work Suspended.

The Central Division has finished all the excavation that it can do at present in the section of the Canal between Gatun Lake and Culebra Cut, known as the Chagres section because the line follows in general that of the Chagres River. There remains to be taken out a portion of a hill at Bohio, on which a contractor is sluicing, a small hill at San Pablo, and a part of the east bank of the river at Gorgona, where another contractor is at work. The hill at San Pablo will be taken out during the dry season of 1912, after the present line of the Panama railroad has been abandoned. There remain about 679,000 cubic yards to be excavated. In the official estimate an additional allowance of 600,000 cubic yards is made for silt, which will be deposited by the river and which will be removed after the Canal is in operation by dredges.

The completion of work in this section had little effect on the common labor force, because most of the men released were absorbed on the relocation of the Panama railroad, and at Gatun and Miraflores. The white Americans were utilized elsewhere, as far as possible.

Miraflores Locks.

In the upper locks at Miraflores, awaiting its turn for further service, lies a wooden form that has been used 20 times in making a joint between the main culverts in the side walls and the lateral culverts at Pedro Miguel Locks. It is one of the "lily forms," so called because of their resemblance to a lily, due to the fact that they represent the joint between a circular culvert and an elliptical one. It is rather a complicated pattern in appearance, and is put together in sections, so that when concrete has set around it, the form may be removed and then assembled again for further use. It cost $250, so that the cost of forming each joint so far made over it is about $12.50. This is typical of the repeated use to which the forms are put in concrete work, both in the Pacific locks and at Gatun, and typical also of the general methods that have resulted in a steady lowering of the price of concrete construction.

The progress of concrete work at Miraflores is indicated on page 2 of this issue. Two of the cantilever cranes are completed, and are performing the entire operation of taking materials from the storage piles, mixing them into concrete, and delivering the concrete into the forms; one to the east side wall and the other to the west wall. There will be four of these cranes in the completed plant; the third is now in process of erection, and work on the fourth will soon be begun.

Concrete laying is in progress only in the upper locks and the north forebay, the work in the lower locks and the south forebay being entirely excavation. Seven steamshovels are digging here, and streams of water from four monitors are performing hydraulic excavation, the material from which is pumped into the dam across the Cocoli River. In anticipation of the rainy season, a sump is being dug into which water from the steamshovel section of the excavation will be drained, to be lifted thence out of the lock site by two 12-inch pumps.

Gatun Locks and Dam.

The steel forms for side wall monoliths in Gatun Locks were moved into the lower locks on April 23 and the placing of concrete in those locks is now in full swing. Most of the floor has been laid with concrete from the auxiliary plants, but two of the construction cableways are now at work on the side walls, four monoliths of which are completed. The floor is 60 per cent completed and over 15 per cent of all the concrete for the lower locks is in place. Concrete work in the middle locks is about 80 per cent completed and in the upper locks it is practically all done. A statement of the concrete work in the series of three twin locks is published on page 2 of this issue, and it shows that over 61 per cent of all the concrete for Gatun Locks is in place.

The hydraulic filling of the east section of the dam was resumed on April 15. This half of the fill had been allowed to settle and dry out during the dry season. Two suction dredges are working on each section. At one point the dry fill has reached an elevation of 90 feet above sea level. A statement of the progress of work on the spillway is published elsewhere in this issue.

Drainage of Culebra Cut.

Preparations for the drainage of Culebra Cut north of the summit at Empire have been completed, and but little trouble is anticipated from water on that slope during the present rainy season. The drainage system north of the summit consists of two diversion ditches or canals running parallel with the Cut on either side, to keep water from draining into the excavation, and a ditch running through the center of the excavation to a sump at the north end, whence the water is pumped over the dike into the Chagres River.

The west diversion, known as Camacho, has given no trouble since its completion in 1908; but the east diversion ditch, the Obispo diversion, broke in one place and was endangered by a slide in another, during the last wet season. The first break was at a point opposite Empire, known as La Pita, and occurred on May 7, 1910. It was due to seamed rock sliding on rock, a movement that was well developed before the rainy season began. A wooden flume was constructed to take the drainage during the rainy season, and this has been replaced by a reinforced concrete flume, completed on April 21. This flume is 370 feet long, with a wing wall 30 feet long on the upstream end, and is 22 feet wide. It will carry 3,040 cubic feet of water per second. The largest quantity ever passing through the diversion is recorded as 2,650 cubic feet per second.

The slide on the east bank opposite Las Cascadas, which had been in motion since April, 1908, broke so far back during December, 1910, that it was deemed advisable to locate a diversion ditch farther back from the Canal, and this relocation work has been completed. It involved the excavation of about 22,000 cubic yards of material, most of which was taken out by scrapers. Two plows and 18 scrapers were employed.

On the south end, the plan for drainage through the center culvert of Pedro Miguel Locks, has not been carried out, because this would interfere with the lock work still in progress at the north end of the locks. The water will be drained through the old Panama railroad culvert and the location of Pedro Miguel dam, as heretofore, until the drainage through the locks can be effected.

Gatun Dam Spillway.

The concrete work in the spillway of Gatun Dam is over 54 per cent completed, 133,466 cubic yards out of a total of 225,000 having been placed up to the close of work on April 22. A statement of the amount laid each day last week and of the total in place, follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
	Cu. Yds.		
April 17	156	14:00	2
April 18	144	14:00	2
April 19	220	14:00	2
April 20	136	10:00	2
April 21	163	12:00	2
April 22	49	4:15	2
Total	868	68:15	2
Previously reported	132,598		
Grand total	133,466		

Record Excavation in Culebra Section.

On April 20th, 45 steamshovels, working in the Culebra section of the Central Division, excavated 67,749 cubic yards of rock and earth

NOTES OF PROGRESS.

(Continued.)

during the working day of eight hours, an average per shovel of 1,505 cubic yards for the day. The next highest record for the Culebra section was made on March 31, 1911, when 66,660 cubic yards of rock and earth were excavated.

Porto Bello Crusher.

A statement of the work done at the Porto Bello crusher, by days, for the week ending April 22, follows:

DATE.	Hours worked.	Cubic Yards.
April 17	6:58	2,624
April 18	6:42	2,567
April 19	7:30	1,935
April 20	7:09	2,686
April 21	7:11	3,060
April 22	6:50	3,370
Total	42:20	16,242

Ancon Crusher.

A statement of the rock crushed at Ancon quarry during the week ending April 22, follows:

DATE.	Hours worked.	Cubic Yards.
April 17	7:35	2,555
April 18	6:40	2,059
April 19	6:15	2,429
April 20	7:15	2,949
April 21	7:10	2,656
April 22	7:15	2,554
Total	42:10	15,202

Family Quarters.

The Canal work at Tabernilla is completed and that at San Pablo is as nearly so as it can be until the relocation of the Panama railroad is in regular use. Employes will be transferred to other points convenient to their work, but all houses suitable as family quarters will be reserved for that purpose and assigned to married employes who are unable to secure family quarters near their work. A statement of the applications for family quarters on file on April 1, follows:

PLACE.	No. 1 List.*	No. 2 List.
Ancon	....	50
Ancon Hospital	2	5
Balboa	3	37 (8)
Corozal	....	34 (3)
Cristobal	....	126 (3)
Culebra	4 (2)	33
Empire	3	59 (21)
Gatun	6	157 (60)
Gorgona	16 (2)	133 (31)
Las Cascadas-Bas Obispo	2	27 (5)
Miraflores	....	1
Pedro Miguel-Paraiso	3	51 (19)
Porto Bello	....	14 (2)
Tabernilla	3	59 (2)
Toro Point	1	9
Total	43 (4)	775 (152)

NOTE.—Figures in parentheses represent occupants of non-housekeeping quarters.

*Employed prior to January 1, 1908.

College Entrance Examinations.

The College Entrance Examining Board has included Ancon among the places at which examinations for entrance to American colleges and universities will be held on June 19 to 24. The certificates of this board admit the holder to any college or university in the United States without further examination. Any person may take the examination, and applications for information should be addressed to F. A. Gause, Superintendent of Schools, Ancon.

Canal Medals.

Canal medals earned during the years 1908–10 will be distributed about September of this year, and those earned during the years 1909–11 will not be ready for distribution until approximately a year later. The list of persons who have earned the medal service bar will be published in the issue of May 3.

Sailing of Cristobal.

The sailing date of the *Cristobal* from Pier No. 11, Cristobal, has been changed to Wednesday, May 3, at 3 p. m., instead of Tuesday, May 2, as shown heretofore on the schedule.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Over 61 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of work on April 22, being 1,286,032 cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending April 22, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers.		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
April 17	2,122	29:48	6	404	7:40	2	152¼	2,678¼
April 18	2,098	32:30	6	350	7:40	2	145¼	2,593¼
April 19	2,042	34:21	6	586	8:40	2	126	2,754
April 20	2,494	38:20	6	592	8:40	2	195½	3,281½
April 21	2,318	38:24	6	618	8:40	2	75¼	3,011¼
April 22	2,048	35:46	6	396	7:40	2	112	2,556
*Portable mixers	....	....	......	455½	....	......	....	455½
Total	13,122	209:09	6	3,401½	49:00	2	806¼	17,329¾
Previously reported	....	....	......	....	....	......	....	1,268,702½
Grand total	....	....	......	....	....	......	....	1,286,032¼

*The 455½ yards shown for the portable mixers are reinforced concrete, and were placed on the following days: April 17, 73 yards; April 18th, 65½ yards; April 19th, 95 yards; April 20th, 97 yards; April 21st, 74 yards; April 22d, 51 yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is about 75 per cent completed, 627,909 cubic yards, out of a total of 837,400, having been placed at the close of work on April 22. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-Cubic yard mixers			AUXILIARY PLANT.						Large stone.	Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete Placed.	Hours worked	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
April 17	614	16:00	2	400	10:00	2	33	2:50	1	8	1,055
April 18	702	12:00	2	496	12:50	2	....	....	......	....	1,198
April 19	626	12:00	2	516	11:00	2	33	2:25	1	....	1,175
April 20	632	10:00	2	278	6:50	2	115	7:00	1	....	1,025
April 21	544	10:00	2	420	12:00	2	20	1:50	1	....	984
April 22	558	10:00	2	350	8:00	2	33	4:50	1	....	941
Total	3,676	70:00	2	2,460	60:40	2	234	18:55	.83	8	6,378
Previously reported	....	....	......	....	....	......	....	....	......	4,179	621,531
Grand total	....	....	......	....	....	......	....	....	......	4,187	627,909

MIRAFLORES LOCKS.

About 15 per cent of the concrete for the system of two twin locks at Miraflores was in place on April 22, the total amount on that date being 202,943 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT.							Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
April 17	832	24:40	4	176	4:00	2	661	46:00	7	....	1,669
April 18	958	26:00	4	228	5:00	2	806	51:50	7	....	2,036
April 19	954	25:50	4	230	4:75	2	834	48:25	7	....	2,060
April 20	858	24:17	4	164	4:00	2	750	50:00	7	....	1,814
April 21	1,004	27:25	4	208	4:00	2	879	45:00	7	....	2,098
April 22	996	26:67	4	252	5:00	2	716	41:42	6	....	1,964
	....	....	......	....	....	......	*135	22:35	.67	....	....
Total	5,602	153:99	4	1,258	27:15	2	4,781	305:32	5.95	....	11,641
Previously reported	....	....	......	....	....	......	....	....	......	3,693	191,302
Grand total	....	....	......	....	....	......	....	....	......	3,693	202,943

*This 135 yards was mixed by a ½-yard mixer, the amounts for each day being: April 18, 44 yards; April 19, 42 yards; April 20, 42 yards; April 21 7 yards.

SOCIAL LIFE OF THE ZONE.

Women's Clubs.

The annual meeting of the Canal Zone Federation of Women's Clubs was held at the Gatun clubhouse on Friday afternoon, April 21, when there was a full attendance of delegates and club members. The visitors were welcomed by the president of the entertaining club, Mrs. V. V. Sessions. In her annual report, Mrs. Thomes E. Brown, Jr., the president of the Federation, reviewed briefly the work of the organization for the past two years during which time she has been its chief officer, and in closing, she urged women to work in the home and in the care of children.

From the reports of the club presidents it was seen that the differences in the efforts of the several organizations are marked; Cristobal, with its 60 odd members, is the only club doing department work; Gatun is interested in civic work and is preparing to take up a study course; Gorgona continues its social meetings and the art embroidery class is one of its features; Paraiso has varied interests and is developing club programs; Pedro Miguel holds business and social meetings alternately. The most notable efforts for the year have been the initiative steps taken by the Cristobal club in the establishing of a systematic campaign against disease in the city of Colon, and by the Gatun club in placing a playground equipment in the village.

The education committee recommended the establishment of self supporting vacation schools. The library extension committee reported the addition of 50 new books to the library in Cristobal, and the exchange of books with the Gatun library. These two juvenile libraries are the property of the Federation, having been presented to the organization in 1909. These libraries will be lent to the public schools which have no libraries for certain portions of the school year.

The following changes in the organization of the Federation were adopted: In place of three meetings a year, there will be one general meeting of the Federation in January, to be held either in Colon or Ancon and the expenses to be met by the federated clubs. The meeting will be divided into two sessions: The business meeting in the morning, and a formal program, followed by a reception in the afternoon. At this time the officers for the year will be elected. The standing committees are abolished; such committees as are necessary for carrying on the work of the organization being appointed. There will be a reciprocity committee, the chairman of which will keep in touch with the clubs and have filed a list of names of speakers and papers that shall be available for the clubs upon application. A custodian will be appointed to take charge of the Federation property. The officers of the Federation, with the presidents of the several clubs, will constitute the executive board, and meetings of this board will be held in October and April, and at such other times as is considered needful.

At the close of the meeting the Federation cook book was placed on sale at auction and more than 50 copies were sold at popular prices. The remainder of the books are still in the hands of the chairman of the committee, Mrs. E. H. Colip, Cristobal, and may be obtained from her, at a price greatly reduced from the original.

Tea was served by the Gatun club, during which time Miss Neville played several selections on the piano.

The following officers were elected to serve until the next annual meeting which will take place in January, 1912: President, Miss J. Macklin Beattie; first vice-president, Mrs. Frederick Mears; second vice-president, Mrs. E. M. Colip; third vice-president, Mrs. V. V. Sessions; recording secretary, Mrs. Carl H. Elliott; corresponding and general federation secretary, Mrs. Thomas E. Brown, Jr.; treasurer, Mrs. M. E. Smith; auditor, Mrs. S. E. Calvit.

Church.

The meetings of St. Luke's Altar Guild will be held at the Hotel Tivoli on the first and third Tuesdays in each month at 9.30 a. m. On May 2, the Rev. E. J. Cooper will speak on his recent visit to Guatemala. The meeting will be informal and the members are privileged to invite their friends. The rector's course of lectures on church history and doctrine that was begun at the Lenten meetings of the guild will be continued in St. Luke's church on Wednesday evenings at 8 o'clock.

Tabernilla Dramatic Club.

The Tabernilla Dramatic Club has elected the following officers: President, Miss Elida Williams; vice president, Mrs. Ray E. Courter; secretary, Mrs. Nolan; treasurer, Mrs. Carl Twitchell, and stage manager, O. S. Farrar. The club will give its first play on Saturday evening, May 6, at the I. C. C. hall, Tabernilla, and the proceeds will be donated towards the American Red Cross endowment fund.

No Staterooms on Ancon and Cristobal.

All available accomodations on the steamships *Cristobal* and *Ancon*, scheduled to sail on May 3 and 8, respectively, having been reserved no further requests for cabin passage will be issued. Requests for steerage passage will be issued until further notice.

Civil Service Examination.

Attention is directed to the fact that cards of admission are sent to all applicants for civil service examinations, if found eligible. No one should report at Culebra without such a card of admission, or at least before having ascertained the date on which an examination is scheduled to be held if no card has been received.

JOHN K. BAXTER,
Secretary, Isthmian Civil Service Board.
Culebra, April 14, 1911,

PERSONAL.

Mr. M. H. Thatcher, accompanied by Mrs. Thatcher and Miss Chinn, left for the States via Cuba on his annual leave of absence on the *Prinz August Wilhelm* on April 25.

Mr. W. W. Warwick, Examiner of Accounts, who was appointed a Justice of the Canal Zone Supreme Court under date of March 16, 1911, did not qualify for that position because before he could do so the President decided that he preferred to have him become a member of the Economy and Efficiency Commission, which is charged with the work of coordinating the duties of the Government departments in Washington. He has accepted the latter position, and sailed for the States on April 25, accompanied by Mrs. Warwick.

I. O. O. F.

The election of officers for Canal Zone Lodge No. 3 of Culebra, held on Monday night, April 17, to fill vacancies caused by resignations resulted as follows: Noble grand, Claud Peters; vice grand, Eugene W. Palmer; secretary, Albert F. Sickler; treasurer, Arthur E. Erickson.

Spanish War Veterans.

There will be a meeting of Lieut.-Col. William L. Sibert Camp No. 1, U. S. W. V., in the lodge hall at Gatun on May 10. Prior to this meeting, at 7.30 p. m., there will be a short meeting for all persons eligible for membership, when the object of the organization will be explained by Commander Young, and those who desire to do so can fill out an application for membership. The initiation fee is $2, and dues are 25 cents a month.

Members of Chagres Camp No. 2, United Spanish War Veterans, are requested to attend a meeting to be held in Kangaroo Hall, Empire, on May 6, at 2.45 p. m.

LABOR FORCE AND QUARTERS IN MARCH.

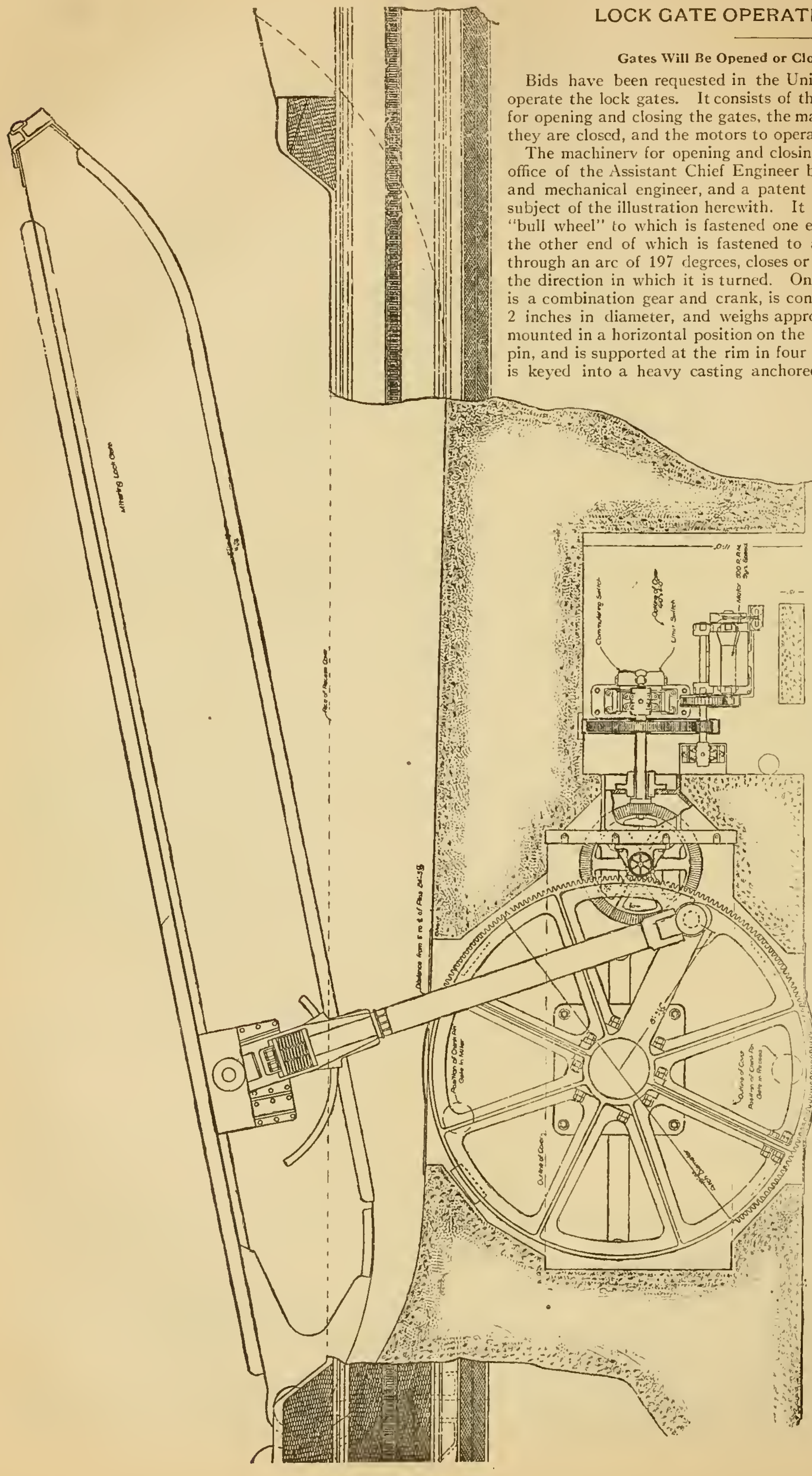
The total of the Canal and Panama railroad force at work on March 29 was 35,806, as compared with 35,955 in February, and with 38,676 in March, 1910. Of the total in March, 1911, Canal employes numbered 28,850, and Panama railroad, 6,956. The force report for March, follows:

DEPARTMENT.	SILVER EMPLOYES.*														Total Gold.	Grand Total.
	Artisans.						European Laborers.		West Indian Laborers.							
	Monthly.	44 cents.	32 cents.	25 cents.	20 cents.	16 cents.	20 cents.	16 cents.	20 cents.	16 cents.	13 cents.	10 cents.	7 cents.	Total Silver.		
Const'ct'n and Eng'r'ng.	4,512	15	18	246	662	2,601	3,270	1,271	112	553	3,568	3,060	268	20,156	3,569	23,725
Civil Administration....	190	..	..	2	4	18	......	......	...	.....	......	3	....	217	367	584
Sanitation........	660	..	..	3	3	2	1	1	...	.....	5	270	9	954	376	1,330
Quartermaster's..........	959	..	3	104	143	75	73	10	10	.....	10	723	10	2,120	224	2,344
Subsistence..............	671	..	..	1	1	.....	......	......	...	.....	......	......	....	673	55	728
Disbursements...........	7	..	..	....	.....	.....	......	......	...	.....	......	......	....	7	25	32
Examinat'n of Accounts.	5	..	..	....	.....	.....	......	......	...	.....	......	......	....	5	102	107
Total.................	7,004	15	21	356	813	2,696	3,344	1,282	122	553	3,583	4,056	287	24,132	4,718	28,850

Panama railroad force, 3,464; Panama railroad relocation force, 2,485; Panama railroad commissary force, 1,007. Total, 6 956. I. C. C. force, 28,850. Grand total. 35,806

*All wages specified are in gold.

The occupants of Commission quarters in March were divided as follows: Gold force or white Americans, 9,506; of whom 5,518 were men, 2,087 women, and 1,901 children. European laborers, 5,867; of whom, 5,243 were men, 268 women, and 356 children. West Indian negroes, 8,842; of whom, 6,369 were men, 1,134 women, and 1,339 children.


Mitering Lock Gate
Commutating Switch
Limit Switch
Motor 300 R.P.M. Syn. Speed
Position of Crank Pin Gate in Miter
Position of Crank Pin Gate in Recess
Outline of Cover
Outline of Cover

LOCK GATE OPERATING MACHINES.

Gates Will Be Opened or Closed in Two Minutes.

Bids have been requested in the United States for the machinery to operate the lock gates. It consists of three distinct parts—the machinery for opening and closing the gates, the machines for locking the gates when they are closed, and the motors to operate these machines.

The machinery for opening and closing the gates was invented in the office of the Assistant Chief Engineer by Edward Schildhauer, electrical and mechanical engineer, and a patent has been issued on it. It is the subject of the illustration herewith. It consists essentially of a crank or "bull wheel" to which is fastened one end of a strut or connecting rod, the other end of which is fastened to a lock gate. The wheel, moved through an arc of 197 degrees, closes or opens the gate leaf, according to the direction in which it is turned. One operation takes 2 minutes. It is a combination gear and crank, is constructed of cast steel, is 19 feet 2 inches in diameter, and weighs approximately 35,000 pounds. It is mounted in a horizontal position on the lock wall; turns on a large center pin, and is supported at the rim in four places by rollers. The center pin is keyed into a heavy casting anchored securely to the concrete. The crank gear or "bull wheel" has gear teeth on its rim and is driven by a single pinion on a vertical shaft. The vertical shaft is driven by a bevel gear and pinion, the pinion being fast on a horizontal shaft passing through the bullkhead, which separates the motor chamber from the bull wheel chamber. This shaft carries a gear with spring center which is driven by a pinion on the back shaft of the motor.

The strut pin is fastened on the wheel in a boss near the rim of the crank gear. The opposite end of the strut or connecting rod is fastened to the gate at a distance of 17 feet from the pintle by means of the strut anchor. The connecting rod consists of a built-up structural member with flexible connection at either end, and a spring shock absorber at the gate end. The purpose of the shock absorber is to prevent undue strain on the crank gear from wave action on the gate, or other causes. It consists of six nests of two springs each, capable of exerting, when solid, a force of about 184,000 pounds and assembled with an initial compression of about 50,000 pounds. The springs are in compression for a force acting in either direction on the strut. A slip joint allows for lengthening or shortening the strut within fixed limits.

The strut is supported at the slip joint by a pair of rollers, which are intended to relieve the joint of undue bending strains. These rollers are supported in spring bearings, which allow for variation in the distance from the center line of the strut to the roller track. The roller track is riveted to the top girder of the miter gate.

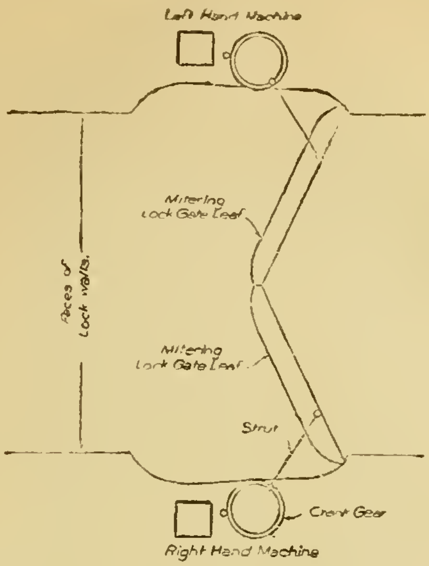
The crank gear end of the strut turns through an angle of about 197 degrees on the pin circle and back again over the same path. At the extreme position the strut is on a dead center with respect to the crank gear and can exert a force on the miter gate depending only on the strength of the strut, crank gear, or gate.

The miter forcing machine is designed to force the gate leaves to perfect miter and lock them in mitered position. It consists essentially of two box shaped castings, one bolted to the outer end of the top girder of each gate leaf, one casting carrying a pair of moveable jaws and their operating mechanism and the other carrying a large pin, which is enclosed by the jaws when they are in the closed position.

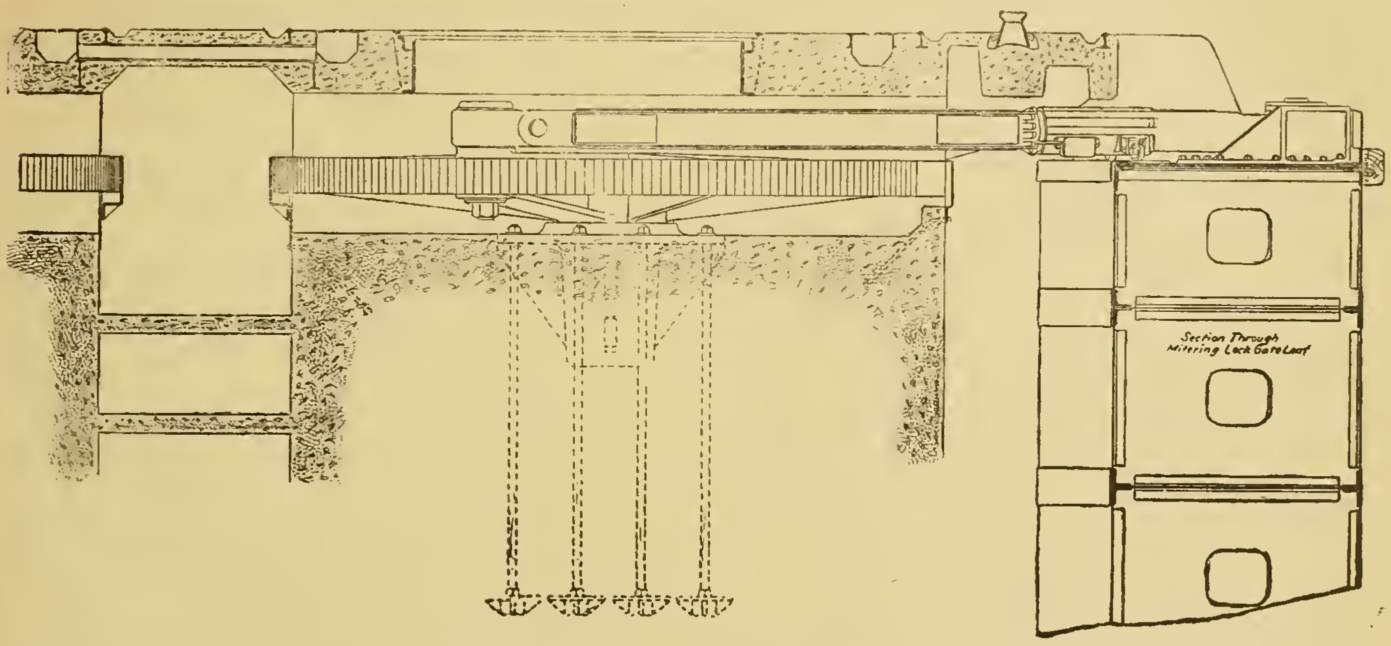
The jaws are connected by a series of toggle links to a crosshead nut which is moved by means of a revolving screw. The end thrust of the screw is taken up by two thrust bearings which transmit thrust in either direction to the main frame casting. The screw is turned by a bevel gear in mesh with a bevel pinion on the motor driving shaft. This driving shaft passes through a plug bearing and is connected to the motor shaft by means of a friction cutoff coupling. The forces acting on the jaws are transmitted directly to the frame through pins when the jaws are in the locking position, and there is no strain on the screw due to forces acting on the jaws. When in open position the jaws allow either gate leaf to reach the mitering position without interference from the other.

The motor is provided with a solenoid brake for bringing the machine quickly to rest when the current is shut off by the limit switch. The estimated time of a single operation for this machine in one direction is 15 seconds.

One gate moving machine will be required for each gate leaf, 92 in all; one miter forcing machine for each gate or pair of leaves, 46 in all; one motor for each gate moving machine and one for each miter forcing machine, 138 in all. Two gate moving machines, one miter forcing machine, and three motors will be purchased first and given a thorough test before the contract for the whole quantity is let.



Mitering Lock Gates Closed Showing Relative Position of Gate Moving Machines.



CROSS SECTION THROUGH CENTER WALL OF LOCK SHOWING POSITION OF APPARATUS WITH RESPECT TO LOCK WALL COPING AND OPERATING TUNNEL.

Cruces Anchors to be Moved to West Point.

Two large wrought iron anchors at Cruces have been taken from the place where they have rested for two centuries or more and sent to West Point, where it is probable they will be mounted above the entrance to the library.

Various people on the Canal Zone and elsewhere have sought in the literature of the Isthmus for some reference to the time and the circumstances under which these anchors were brought to Cruces. If any such reference is extant, it is not a matter of common knowledge. Cruces, or as it was originally called, Venta Cruz, is on the Chagres River, a distance of 36 miles by the waterway from the Caribbean Sea, and a distance overland from the Pacific by the main trail of 15 miles. It is known that Nombre de Dios was founded in 1519 and that a line of posts was run across the Isthmus from that port to old Panama. Soon afterwards a road was constructed between the two settlements along the line of posts. In 1534, or soon after that date, a route by water for boats and light draft vessels was established from Nombre de Dios along the coast and up the Chagres to Cruces. This was accomplished by removing obstructions which had interfered with the navigation of the river, but the use of the paved way was not discontinued. It is known, also, that early in the 16th century, ships were taken apart on the Atlantic side, and the parts were transported across the Isthmus and assembled again on the Pacific side; and that other heavy freight was taken over the trails.

There is a legend which says that the anchors were brought up the Chagres in boats and unloaded at Cruces for transport overland to Panama. Forty men were carrying an anchor when one of them stumbled and fell. The others were unable to stand the weight and the anchor fell, crushing seven of them. The point at which the anchor now rests is called Matasiete, which is Spanish for "kill seven."

The idea of removing the anchors to West Point originated with Lieut. Walter D. Smith, class of 1901 at the Military Academy, and the work of taking them to the railroad was assigned to him. One of them stood in the village about 300 yards from the river and the other alongside the trail in the jungle about 400 yards from the river. Each anchor has a 14-foot shank and is made of wrought iron. A raft was constructed on the river at Cruces and the anchors were hauled on sledges by block and tackle to the bank, where they were loaded upon the rafts and floated to Gamboa. There a crane lifted them to a flat car and they were taken to the ship.

Cold Storage Price List.

The prices of cold storage articles as published last week remain unchanged.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

COROZAL.

The indoor baseball team will play the Gorgona team at Corozal on Saturday night, April 29.

The Corozal pennants have arrived and may be purchased at the office.

An informal social will be held on Thursday evening, May 4.

CULEBRA.

In the bowling match on Saturday, April 22, the Culebra team was defeated by the Gatun team by a score of 2 to 1.

Following are the latest moves of the wireless chess game between Porto Bello and Culebra:

Porto Bello.	Culebra.
10. Q—Kt 3	10. Q Kt—Q 2
11. Castles (K R)	11. Castles.

On Tuesday evening, April 24, W. A. Reece gave an illustrated lecture to Culebra men on "Things Electrical."

On Friday evening, April 28, there will be held a smoker. Special talent has been secured and a good program is expected.

EMPIRE.

Empire's new bowling alleys were opened on Saturday evening, April 22. A large crowd was present to see Mr. Warwick throw the first ball. A local orchestra of mandolins and banjos provided music for the occasion. The first strike was made by T. L. Clear, and high score of 208 by J. A. Parkis.

Empire defeated Corozal at indoor baseball on April 22, by a score of 20 to 14. The batteries for Empire were Young and Mullane, and for Corozal, Ritter and Cunningham.

The following high scores in duckpins were made during the week ending April 22: W. G. Brown, 104; Giavelli, 104; Lippert, 103; Parkis, 113; Huson, 109, 101; Potter, 109, 100; P. F. Brown, 101; Pinney, 117 102; Rodeghiere, 100. High scores in tenpins were as follows: Peterson, 213, 209; Danielson, 202, 200; Parkis, 205, 208; P. F. Brown, 211, 202.

The March statistical report shows that Empire clubhouse had 400 members, a percentage according to population of 70, that over 2,000 games were bowled, and that over 6,000 games of pool were played.

The literary society on Monday evening, April 24, discussed the problem of "Handling men."

The Gatun duckpin team will play at Empire on Saturday evening April 29. This will be the first tournament game on the new alleys.

GORGONA.

Gatun lost to Gorgona at indoor basball, by a score of 18 to 6, on Saturday night, April 23. This is the third straight victory for Gorgona since the opening of the league.

"Should prohibition be universal in the United States" was the topic for discussion last Wednesaday S. C. Murray led the discussion.

Ten boys have passed their tests for second class scout badges, and are now preparing themselves for the first class test.

GATUN.

On April 17, the orchestra from the Hamburg-American liner *Prinz August Wilhelm* gave a recital. The orchestra will be engaged for another concert in the near future.

Gatun lost three games of duckpins to Culebra on the local alleys on Saturday evening, April 22.

Instead of the debate scheduled for the literary club on Wednesday evening, April 19, Franklin Matthews gave a talk on "Incidents in the life of a correspondent." Mr. Ross of Empire and Mrs. Ludwig of Gatun sang several solos during the evening.

The 100, or over, duckpin scores for the week ending April 22 are as follows: DePoorter, 122, 101, 105; H. S. Adams, 100; Wells, 106, 101; Green, 100, 105, 101; Barte, 100, 104, 102, 103, 112, 110, 105.

CRISTOBAL.

In the Isthmian Duckpin League the following scores were made on Saturday night, April 22:

Gorgona.				Cristobal.			
Otis........	83	97	76	Adams....	79	87	89
Misel.......	86	79	89	Jacques...	86	91	81
Dunlap.....	91	96	115	DeCora...	80	92	127
Davis......	86	78	87	Sullivan...	81	108	84
Varenkamp..	93	92	91	Herring...	93	90	90
Total.....	439	442	458	Total...	419	473	471

The following 100, or over, scores were made during the week in duckpins: Rosteck, 111; Claherty, 101, 110; Furlong, 103, 121, 102, 103; Wheeler, 100; Hess, 109; Weston, 107; DeCora, 110, 111, 101, 127· Sullivan, 101, 106, 108; Beck, 104; Bullard, 123; Gibson, 104; Adams, 106; Smith, 107; Howard, 104; Louch, 136; Herring, 104, 101; Dunlop (Gorgona), 115.

Culebra defeated Cristobal in indoor baseball on Saturday night by the score of 12 to 10. The batteries were: Culebra—Tupper and Cushing; Cristobal—Russell and McSparren.

A debating and discussion club was organized on Wednesday night and the following committee was appointed to draw up a constitution: Messrs. Ware, Yeiser, and Richards. Messrs. Weaver, Moyer, Ware and Yeiser were appointed to conduct the first debate on the following subject "Resolved that the resignation of President Diaz of Mexico would be for the betterment of that country." Debates will be held every Wednesday night.

COACH TARIFF

Rates Established in The Canal Zone and Panama

ANCON, C. Z., April 20, 1911.

By virtue of the authority conferred on me by an ordinance enacted by the Isthmian Canal Commission on August 25, 1910 and approved by the Secretary of War on December 3, 1910, I hereby establish and promulgate, to be effective on and after May 4, 1911, the rates and charges hereinafter set forth which may be made and collected by persons engaged in the transportation of passengers for hire over the streets and roads of the Canal Zone by means of carriages, surreys, wagons, carts, coaches, cabs, or other conveyances drawn by horses or mules.

Any person who shall charge and receive for the transportation of any person over the streets or roads of the Canal Zone in any of the aforesaid conveyances, any sum in excess of any rate herein prescribed, or any person who shall receive for himself or others such transportation in the Canal Zone, and who fails or refuses to pay therefor the rate or rates herein prescribed, shall be held to be guilty of a misdemeanor, and upon conviction, shall be fined for each offense a sum not exceeding Twenty-five Dollars (Sections 4 and 5 of Ordinances.) A rate different from that herein prescribed may, however, be charged and paid if the parties to the transaction agree thereon; but if there be any dispute as to such agreement the duly prescribed rate shall prevail (Section 4). Where the rates are indicated to cover transportation of persons betweeen Zone points and points in Panamanian territory, they are the same that have been duly established and promulgated by Panamanian authority for the like service; the rates to cover such transportation having been agreed on by such Panamaian authority and myself, thus providing harmony of coach tariffs; and, except under agreement otherwise, it shall be unlawful to charge and receive any rate not so prescribed, or to refuse to pay any rate so prescribed.

The failure of any coachman to keep a copy of this tariff displayed in his coach constitutes a violation of the aforesaid ordinance.

Except when duly licensed in the Republic of Panama, on each conveyance aforesaid employed in the transportation of passengers for hire, there shall be paid to the Canal Zone Government a license tax of $1.25 (United States Currency) a month (Par. "A," Section 7, of the "Regulations Providing for Certain Taxes and licenses in the Canal Zone other than for the Sale of Intoxicating Liquors," effective July 1, 1908, as amended by ordinance enacted August 25, 1910, and approved by the Acting Secretary of War, October 31, 1910.)

All coaches and like conveyances on Zone streets and roads should carry lights between the hours of 6 p. m. and 5 a . m., and should also be provided with bells or horns.

Coachmen should secure copies of this tariff from the Head of the Department of Civil Administration, Ancon, Canal Zone.

(Note A.) The rates herein indicated are in Panamanian (silver) money. The rates in United States currency are one-half of those shown in this tariff.

(Note B.) The term "east of Episcopal chapel" means east of a north and south line drawn through the entrance to the chapel.

(Note C.) One stop, not exceeding five (5) minutes, in transit between two points will be allowed without the payment of extra fare.

(Note D.) Between 11 p. m. and 6 a. m. the rates are increased fifty (50) per cent.

(Note E.) In lieu of the rates herein named, special agreements as to rates may be made between passengers and coachmen.

		One person.	Two persons.	Three persons.	Four persons.
ANCON AND CITY OF PANAMA.					
Between the Episcopal chapel (hospital grounds) and any point in Panama, or any point in Ancon east of Episcopal chapel...	One way...	$0.20	$0.40	$0.60	$0.80
	Round trip	.40	.80	1.20	1.60
Between Hotel Tivol or its environs and any point in Ancon east of Espicopal chapel........	One way...	.20	.40	.60	.80
	Round trip	.40	.80	.120	1.60
Between any point in Ancon on the Zone line road as far south as House No. 115, and any other point in Ancon east of Episcopal chapel, or any point in Panama........	One way...	.20	.40	.60	.80
	Round trip	.40	.80	1.20	1.60
Between kitchen building of Ancon Hospital and any point in the hospital grounds........	One way...	.20	.40	.60	.80
	Round trip	.40	.80	1.20	1.60
Between kitchen building of Ancon Hospital and any other point in Ancon east of Episcopal chapel, or any point in Panama...	One way...	.50	1.00	1.20	1.40
	Round trip	1.00	1.50	1.80	2.00
Between Administration building in Ancon and any point in Ancon north of postoffice or any point in Panama........	One way...	.40	.80	1.10	1.30
	Round trip	.80	1.20	1.50	1.70
Between the fire station in Ancon Hospital grounds and any point in Ancon east of Episcopal chapel........	One way...	.70	1.40	2.00	2.50
	Round trip	1.40	1.90	2.40	2.80
Between Ancon Hospital cemetery and any point in Ancon east of Episcopal chapel........	One way...	1.00	1.50	2.00	2.50
	Round trip	1.50	2.00	2.50	3.00
Between any points in Ancon embraced in the boundary enclosed by street running from Administration building to Roman Catholic chapel; thence to postoffice; thence southwesterly on Zone line road; thence to Administration building.......	One way...	.20	.40	.60	.80
	Round trip	.40	.80	1.20	1.60
Between any point in Ancon east of Episcopal chapel, and any other point in Ancon or any point in Panama........	One way...	.20	.40	.60	.80
	Round trip	.40	.80	1.20	1.60
Between intersection of Bishop's Hollow and Ancon Hospital roads (east of new corral) and any point in Panama or Hotel Tivoli and its environs or any point in Ancon east of Episcopal chapel........	One way...	.40	.80	1.10	1.30
	Round trip	.80	1.20	1.50	1.70
Between Ancon Insane Asylum (Bishop's Hollow road) and any point in Panama or Hotel Tivoli and its environs or any other point in Ancon east of Episcopal chapel........	One way...	.60	1.20	1.50	1.80
	Round trip	1.20	1.80	2.20	2.50
Between I. C. C. labor camps (Bishop's Hollow road) and any point in Panama or Hotel Tivoli and its environs, or any point in Ancon east of Episcopal chapel........	One way...	.70	1.40	2.00	2.50
	Round trip	1.40	1.90	2.40	2.80
Between any point in Ancon east of Episcopal chapel or any point in Panama, and the old ice factory (out Savannas road).	One way...	.40	.60	.80	1.00
	Round trip	.60	1.20	1.50	1.80
BALBOA.					
Between Balboa docks and East Balboa commissary........	One way...	.40	.80	1.10	1.30
	Round trip	.80	1.20	1.50	1.70
Between East Balboa commissary and East Balboa hotel........	One way...	.20	.40	.60	.80
	Round trip	.40	.80	1.20	1.60
Between East Balboa hotel and junction of Zone line road and Panama-Balboa road........	One way...	.20	.40	.60	.80
	Round trip	.40	.80	1.20	1.60
Between El Chorrillo (junction of Zone line road and Panama-Balboa road) and any point in the city of Panama, or the Hotel Tivoli and environs, or any other point in Ancon east of Episcopal chapel........	One way...	.40	80	.110	1.30
	Round trip	.80	1.20	1.50	1.70
Between Balboa docks and any point in Panama or the Hotel Tivoli and environs or any point east of Epsicopal chapel....	One way...	1.00	2.00	2.50	3.00
	Round trip	2.00	3.00	3.50	4.00
Between East Balboa commissary and any point in Panama or the Hotel Tivoli and environs or any point east of Episcopal chapel........	One way...	.70	1.40	2.00	2.50
	Round trip	1.40	1.90	2.40	2.80
SAVANNAS ROAD.					
Between the old rock quarry (near the boundary line between the Canal Zone and the city of Panama) and the Hotel Tivoli and environs, or any point in Ancon east of Episcopal chapel, or any point in Panama........	One way...	.60	1.20	1.50	1.80
	Round trip	1.20	1.80	2.20	2.50
Between Tumbo Muerto road and any point in Ancon east of Episcopal chapel, or any point in Panama........	One way...	1.00	2.00	2.50	3.00
	Round trip	2.00	3.00	3.50	4.00
Between the Savannas Police Station and any point in Ancon or Panama........	One way...	1.50	3.00	4.00	4.50
	Round trip	3.00	4.00	4.50	5.00
Between Zone line beyond or east of Savannas Police Station and any point in Ancon or Panama........	One way...	2.00	3.50	4.50	5.50
	Round trip	3.50	5.00	6.00	6.50
Between Rio Ahajo (beyond Zone boundary line) and any point in Ancon or Panama........	One way...	2.50	4.00	5.00	6.00
	Round trip	4.00	6.00	7.00	8.00
JUAN DIAZ.					
Between Juan Diaz River and any point in Ancon or Panama..	One way...	5.00	8.00	10.50	12.50
	Round trip	7.50	10.00	12.50	14.00

INTERIOR STREETS AND ROADS OF CANAL ZONE SOUTH OF GATUN LAKE.

		One person.	Two persons.	Three persons.	Four persons.
Between any point in Corozal and any point in Ancon or the city of Panama	One way	3.00	5.00	7.00	8.00
	Round trip	5.00	7.00	8.00	9.00
Between any two points in Corozal	One way	.20	.40	.60	.80
	Round trip	.40	.80	1.20	1.60
Between any point in Corozal and the Cardenas River	One way	1.20	2.00	3.00	3.50
	Round trip	2.00	3.00	3.50	4.00
Between any point in Corozal and any point in Miraflores	One way	3.00	5.00	7.00	8.00
	Round trip	5.00	7.00	8.00	9.00
Between any point in Miraflores and the Cardenas River	One way	1.80	3.00	4.00	4.50
	Round trip	3.00	4.00	4.50	5.00
Between any two points in Miraflores	One way	.20	.40	.60	.80
	Round trip	.40	.80	1.20	1.60
Between any point in Miraflores and any point in Pedro Miguel	One way	.50	1.00	1.40	1.70
	Round trip	1.00	1.50	2.00	2.50
Between any two points in Paraiso	One way	.20	.40	.60	.80
	Round trip	.40	.80	1.20	1.60
Between any point in Paraiso and any point in Pedro Miguel	One way	.30	.60	.90	1.20
	Round trip	.60	1.20	1.60	2.00
Between any point in Paraiso and any point in Empire	One way	3.00	5.00	7.00	8.00
	Round trip	5.00	7.00	8.00	9.00
Between any two points in Empire west of the Panama railroad	One way	.30	.60	.90	1.20
	Round trip	.60	1.00	1.30	1.60
Between any point in Empire west of Panama railroad and any point in Camacho (New Empire) or to the slaughter house	One way	.40	.80	1.10	1.30
	Round trip	.80	1.20	1.60	2.00
Between any point in Empire west of Panama railroad and any point in Golden Green	One way	.50	1.00	1.40	1.70
	Round trip	1.00	1.50	2.00	2.50
Between any point in Empire west of Panama railroad and Cerro	One way	.50	1.00	1.40	1.70
	Round trip	1.00	1.50	2.00	2.50
Between any point in Empire and Culebra railroad station	One way	1.00	1.50	2.00	2.50
	Round trip	1.50	2.00	2.50	3.00
Between any point in Empire and any point on Culebra hills above railroad station, including Rio Grande	One way	1.50	2.20	2.80	3.30
	Round trip	2.20	2.80	3.40	4.00
Between Rio Grande and the white school building in Culebra	One way	.30	.60	.90	1.20
	Round trip	.60	1.20	1.60	2.00
Between Culebra railroad station and any point on Culebra hills, including Rio Grande	One way	.50	1.00	1.40	1.70
	Round trip	1.00	1.50	2.00	2.50
Between any point in Empire west of Panama railroad, and any point in Empire east of railroad	One way	.40	.80	1.10	1.30
	Round trip	.80	1.20	1.60	2.00
Between any point in Empire and Las Cascadas plantations	One way	4.00	6.00	7.50	8.50
	Round trip	6.00	7.50	9.00	10.00
Between any point in Empire and any point in Las Cascadas	One way	1.00	1.50	2.00	2.50
	Round trip	1.50	2.00	2.50	3.00
Between any point in Empire and any point in Paraiso	One way	3.00	5.00	7.00	8.00
	Round trip	5.00	7.00	8.00	9.00
Between any point in Las Cascadas, and Bas Obispo railroad station	One way	1.50	2.20	2.80	3.30
	Round trip	2.20	2.80	3.40	4.00
Between Bas Obispo railroad station, and Camp Elliott or any point on Bas Obispo hills	One way	.30	.60	.90	1.20
	Round trip	.60	.100	1.30	1.60
Between any point in Bas Obispo and any point in Gorgona	One way	3.00	5.00	6.50	8.00
	Round trip	5.00	6.50	8.00	9.00
Between any point in Gorgona and slaughter house	One way	.40	.80	1.10	1.30
	Round trip	.80	1.20	1.60	2.00
Between I. C. C. shops and any point in Gorgona, or between any point in Gorgona and Buzzard Hill, or Brooklyn	One way	.30	.60	.90	1.20
	Round trip	.60	1.00	1.30	1.60
HOURLY RATES.					
Between 6 a. m. and 11 p m., Coach per hour		2.00	2.50	3.00	3.50
Between 11 p. m. and 6 a. m., coach per hour		2.50	3.00	3.50	4.00
CRISTOBAL—MOUNT HOPE—COLON.					
Between any two points in Cristobal	One way	.20	.40	.50	.60
	Round trip	.40	.70	.90	1.00
Between any point in Cristobal and any point in Colon, including Colon Hospital	One way	.20	.40	.50	.60
	Round trip	.40	.70	.90	1.00
Between any point in Cristobal and any point in Colon beyond or east of Colon Hospital	One way	.30	.60	.80	1.00
	Round trip	.60	1.00	1.30	1.50
Between I. C. C. corral and any point in Cristobal or any point in Colon south of 11th street	One way	.30	.60	.80	1.00
	Round trip	.60	1.00	1.30	1.50
Between I. C. C. corral and any point in Colon north of 11th street and including Colon Hospital	One way	.40	.80	1.00	1.20
	Round trip	.80	1.40	1.80	2.00
Between I. C. C. corral and any point in Colon beyond or east of Colon Hospital	One way	.50	1.00	1.30	1.60
	Round trip	1.00	1.70	2.20	2.50
Between Mount Hope pumping station and I. C. C. corral	One way	.20	.40	.50	.60
	Round trip	.40	.80	.90	1.00
Between MountHope pumping station and any point in Cristobal or in Colon south of 11th strret	One way	.50	1.00	1.30	1.60
	Round trip	1.00	1.70	2.20	2.50
Between Mount Hope pumping station and any point in Colon north of 11th street, including Colon Hospital	One way	.70	1.40	1.80	2.20
	Round trip	1.40	2.50	3.00	3.30
Between Mount Hope pumping station and any point in Colon beyond or east of Colon Hospital	One way	.80	1.60	2.00	2.40
	Round trip	1.60	2.80	3.50	4.00
NOTE—For the purpose of this tariff the town of Cristobal shall be considered as including all Zone area north of the southern shore of Folks River.					
GATUN.					
Between any two points in Gatun, including the Panama railroad station on the south and the residence of the Division Engineer, the I. C. C. quarters, and labor harracks on the north	One way	.30	.60	.80	1.00
	Round trip	.60	1.00	1.30	1.50
Between any two points in New Gatun	One way	.20	.40	.50	.60
	Round trip	.40	.70	.90	1.00
Between any point in New Gatun and any point in Old Gatun	One way	.50	1.00	1.30	1.60
	Round trip	1.00	1.70	2.20	2.50
Between any point in Gatun and any point in Cristobal or Colon	One way	5.00	8.00	10.50	12.50
	Round trip	7.50	10.00	12.50	14.00
Between any point in New Gatun and any point in Cristobal or Colon	One way	4.50	7.00	9.00	10.50
	Round trip	6.50	8.50	10.50	11.50
RATES OF COACHES BY THE HOUR.					
One coach, per hour		1.50	2.00	2.50	3.00

M. H. THATCHER
Head of Department of Civil Administration.

Lease of Lots in Colon.

Sealed bids will be received up to 5.30 p. m., Wednesday, May 31, 1911 for lease to the highest bidder of lots in the newly filled section of Colon as shown on plans which may be seen at the Land Office in Colon and at the Land Office in Panama.

These sealed bids must be addressed to the General Superintendent of the Panama Railroad Company, Colon, and must be plainly marked on the outside of the envelope "Proposal for lot No. ——, block No. ——, Colon." Bids not marked in this manner will not be considered.

The minimum rental to be accepted for these lots may be ascertained by applying to either one of the above mentioned Land Offices.

Persons holding options on any lots in this district and having paid rental up to June 30, 1910, will have the privilege of taking the lot at the highest rate offered.

The lots to be leased are those on the west side of E street between 2d street and 14th street, and that district on the east side of E street bounded by 2d street on the north, 9th street on the south, E street on the west and G street on the east.

Those lots on the west side of E street will be available for building on or about June 1, 1911; the balance of the lots will not be available for building before October 1, 1911.

Parties submitting bids must state character and purpose of building they intend to erect, and must indicate period of time in which they expect to commence construction after assignment.

Application blanks may be obtained at the Land Office in Colon and Panama.

All rental is to be paid quarterly in advance.

The Panama Railroad Company reserves the right to reject any or all bids.

J. A. SMITH,
General Superintendent.

Colon, R. P., April 22, 1911.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Cristobal, C. Z., on Sunday, April 30, 1911, at 4.30 p. m.

The next concert will be given at Gatun, on Sunday, May 7, at 5 p. m.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending May 3, 1911: (75th meridian time):

DATE.	Low.	High.	Low.	High	Low.
	A. M.	A. M.	A. M.	P. M.	P. M.
April 27	......	2.18	8.32	2:36	8.58
April 28	......	3.04	9.17	3.20	9.41
April 29	......	3.47	10.02	4.02	10.23
April 30	......	4.30	10.43	4.45	11.07
May 1	......	5.13	11.28	5.28	11.52
			P. M.		
May 2	......	6.00	12.15	6.13	......
May 3	12.38	6.45	1.04	7.02	......

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, April 22, 1911. All heights are in feet above mean sea level.

DAY AND DATE.	STATION.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun. April 16	128.7	94.6	47.4	13.4	13.4
Mon. April 17	129.3	95.0	47.9	13.7	13.6
Tues. April 18	129.2	94.9	47.8	14.1	14.0
Wed. Qpril 19	129.0	95.0	47.8	14.3	14.2
Thurs. April 20	127.5	93.8	46.6	14.3	14.2
Fri. April 21	126.6	93.2	45.9	14.3	14.2
Sat. April 22	126.4	92.9	45.5	14.1	14.1
Height of low water	125.0	92.0	44.0		

Rainfall from April 1 to 22, Inclusive.

STATIONS.	Maximum in one day	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	.76	4	2.35
Balboa	1.31	4	2.75
*Miraflores	1.05	4	1.82
Pedro Miguel	1.44	8	2.84
Rio Grande	2.29	8	3.05
Central Section—			
Culebra	1.03	8	1.52
*Camacho	1.14	8	2.70
Empire	.57	8	1.04
Gamboa	.76	8	1.44
*Juna Mina	.36	8	.68
Alhajuela	.81	8	1.03
El Vigia	.37	8	.66
*Gorgona	1.40	7	2.47
San Pablo	1.32	8	2.61
Tabernilla	2.08	8	3.98
Bohio	1.68	12	4.12
*Monte Lirio	1.10	12	3.84
Atlantic Section—			
Gatun	.76	12	2.38
*Brazos Brook	.43	8	2.24
Cristobal	.67	12	2.41
Porto Bello	1.78	16	†4.93
*Nombre de Dios	.87	4	1.47

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—value, midnight to midnight.

†To 5 p. m., April 21.

OFFICIAL CIRCULARS.

Mechanical Committee.

CULEBRA, C. Z., April 18, 1911.

CIRCULAR No. 383:

1. For the purpose of standardizing shop practices and methods, securing uniformity in the performance of work, disseminating useful information, and discussing shop methods and mechanical work, a Mechanical Committee is appointed, with the following membership:

The Inspector of Shops.
The Superintendent of the Mechanical Division.
The Superintendent of steamshovel repairs.
The Superintendent of dredging, Balboa shops.
The Master Mechanic, Cristobal Dry Dock shops.
The Master Mechanic, Porto Bello shop.
The General Foreman, car department, Panama railroad.
The General Foreman, locomotive department, Gorgona shops.
The General Foreman, car and foundry department, Gorgona shops.
The General Foreman, Las Cascadas engine house.
The General Foreman, Pedro Miguel engine house.
The General Foreman, Gatun shops.
The Foreman, Toro Point shop.
The Day Foreman, Cristobal roundhouse, Panama railroad.

2. Regular meetings will be held on the last Monday in each month (or the following day if Monday is a holiday) at 7.45 a. m. Meetings will be held usually, and in the absence of notice to the contrary, at the Gorgona shops. They may be held at other shops whenever so desired by the committee. Other persons may attend meetings on invitation, and the attendance of any foremen and other employes may be requested whenever desired by the committee. A permanent record shall be kept of the proceedings of the committee, so far as is considered necessary, and duplicate copies of the record of each meeting will be forwarded to this office. The Inspector of Shops will preside at meetings, and he may call special meetings whenever necessary. The first meeting of this committee will be held on Monday, April 30, at Gorgona shops.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Repairs to Locomotive Flues.

CULEBRA, C. Z., April 19, 1911.

CIRCULAR No. 385:

The following rules will be strictly adhered to in the maintenance of repairs of flues of all American locomotive boilers and of all locomotive type boilers on steamshovels and in stationary plants of both the Isthmian Canal Commission and the Panama Railroad Company:

1. The use of plugs in flues of locomotive type boilers should be avoided whenever practicable. In any case, not more than two plugs will be allowed in any one sheet for more than 12 hours. If the requirements of the service and the condition of the boiler require the use of more than two plugs for more than 12 consecutive hours, a report on the condition of the boiler and the necessity for continuing it in service should be made promptly to the head of the division or department having jurisdiction over it. One copy of each report on the boiler of a locomotive will be sent to the traveling engineer, one copy of each report on the boiler of a steamshovel will be sent to the superintendent of steamshovel repairs, and one copy of each report on a locomotive type boiler in a stationary plant will be sent to the boiler inspector.

2. The use of rolls in fire boxes of boilers on American locomotives, steamshovels and of locomotive type boilers in stationary plants is prohibited, except in case of emergency, which will be reported promptly to the head of division or department.

3. All beading tools will be made in accordance with standard gauge; and no tools will be permitted to be used after thay are worn out of gauge. All standard gauges will be made and furnished by Gorgona shops. The foreman in charge of the working of flues of locomotive type boilers shall obtain standard gauges and see that no beading tools are used which do not conform to the standard gauge. Standard beading tools will be obtained from Gorgona shops. Old beading tools should be returned to Gorgona shops for repair.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Acting Subsistence Officer.

CULEBRA, C. Z., April 20, 1911.

CIRCULAR No. 386:

During the absence from the Isthmus of Major E. T. Wilson, Subsistence Officer, Isthmian Canal Commission, all his duties in connection with the Subsistence Department, Isthmian Canal Commission, and the Commissary Department, Panama Railroad Company, will be performed by Lieutenant F. O. Whitlock, Assistant Subsistence Officer, Isthmian Canal Commission.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Classified Expenditure Accounts.

EMPIRE, C. Z., April 15, 1911.

CIRCULAR No. 30:

The following classified expenditure accounts are authorized:

DEPARTMENT OF CONSTRUCTION AND ENGINEERING
CENTRAL DIVISION.

328. *Masonry.*

A. Construction Work.

To this account will be charged a proper proportion of the salaries and expense of the supervising force of the division, and the salaries and expenses of all officers and employes while engaged directly in the construction of masonry work within the prism of the Canal for reinforcing the sides, or of auxiliary masonry work outside the prism of the Canal such as diversion flumes; also all material and supplies used and expenses incurred and the repair of equipment used in the work.

B. Plant.

This account will be opened with a charge of the value of plant heretofore purchased for, or used by this division in the work of masonry construction and of plant hereafter purchased or used therein; also to be charged with plant transferred from other divisions and credited with plant transferred from this division.

General Items.

424. *Lighting and Buoying the Canal.*

To this account will be charged all labor, material and other expenses incidental to the lighting and buoying of the Canal including the construction of buoys, beacons and lighthouses.

W. W. WARWICK,
Examiner of Accounts.

Approved: GEO. W. GOETHALS,
Chairman and Chief Engineer.

New Schedule for Pay Car.

The monthly schedule of the I. C. C. pay car effective May, 1911, follows:

SCHEDULE FOR THE 12TH OF THE MONTH.

Leave Empire at 7 a. m.
Balboa dumps, 8 to 8 30 a. m.
Ancon crusher, 8.45 to 9 a. m.
Corozal, 9.15 to 9.30 a. m.
Miraflores dump, 9.45 to 10.15 a. m.
Miraflores power house, 10.20 to 10.30 a. m.
Pedro Miguel, 10.45 a. m. to 12 noon.
Miraflores Locks, 12.15 to 2.30 p. m.
Mt. Zion pump station, 3 to 3.05 p. m.
Culebra station, 3.15 to 3.45 p. m.
Lirio, 3.50 to 4 p. m.
Empire, 4.05 p. m.

SCHEDULE FOR THE 13TH OF THE MONTH.

Leave Empire at 7 a. m.
Through Canal, Bridge 57½ to Las Cascadas, 7.45 to 10.45 a. m.
Las Cascadas, 11 a. m. to 12.15 p. m.
Bas Obispo, 12.20 to 12.30 p. m.
Gorgona and Gorgona shops, 12.45 to 2 p. m.
Matachin, 2.15 to 2.30 p. m.
Through Cut, Matachin to Las Cascadas, 2.30 to 3.30 p. m.

SCHEDULE FOR THE 14TH OF THE MONTH.

Leave Empire at 5.30 a. m.
Gatun, 6.45 a. m. to 1.30 p. m.
Bohio, 2 to 2.15 p. m.
Frijoles, 2.25 to 2.30 p. m.
Tabernilla, 2.40 to 3 p. m.
Over relocation, Barbacoas to Gamboa, 3 to 4.30 p. m.
Gamboa yard, 4.30 to 4.40 p. m.

When one of the above days falls on Sunday or holiday, payments will be made the same as for a week day; but stops made only at points along the main line of the P. R. R. except on notice from divisions to go to certain points where they may have men at work.

EDWARD J. WILLIAMS,
Disbursing Officer.

Approved: GEO. W. GOETHALS,
Chairman and Chief Engineer.

Local Auditor, P. R. R.

PANAMA RAILROAD COMPANY,
OFFICE OF GENERAL SUPERINTENDENT,
COLON, R. P., April 20, 1911.

CIRCULAR No. 135:

Effective at once, Mr. R. W. Hart is appointed Local Auditor of the Panama Railroad Company, with headquarters at Colon, R. P., vice Mr. H. L. Stuntz, resigned.

J. A. SMITH, *General Superintendent.*

Approved: GEO. W. GOETHALS,
President.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Allianca	P. R. R.	Saturday	April 29
Colon	P. R. R.	Saturday	May 6
Advance	P. R. R.	Friday	May 12
Panama	P. R. R.	Thursday	May 18
Allianca	P. R. R.	Wednesday	May 24
Colon	P. R. R.	Wednesday	May 31
Advance	P. R. R.	Tuesday	June 6
Panama	P. R. R.	Monday	June 12
Allianca	P. R. R.	Saturday	June 17
Colon	P. R. R.	Saturday	June 24
Advance	P. R. R.	Friday	June 30

CRISTOBAL TO NEW YORK.

Cristobal	P. R. R.	Wednesday	May 3
Ancon	P. R. R.	Monday	May 8
Allianca	P. R. R.	Friday	May 12
Colon	P. R. R.	Thursday	May 18
Advance	P. R. R.	Wednesday	May 24
Panama	P. R. R.	Wednesday	May 31
Allianca	P. R. R.	Tuesday	June 6
Colon	P. R. R.	Tuesday	June 13
Advance	P. R. R.	Sunday	June 18
Panama	P. R. R.	Saturday	June 24
Allianca	P. R. R.	Friday	June 30
Colon	P. R. R.	Thursday	July 6
Advance	P. R. R.	Wednesday	July 12

NEW YORK TO COLON.

Zacapa	U. F. C.	Thursday	April 27
Prinz Eitel Friedrich	H.-A.	Friday	April 28
Clyde	R. M.	Saturday	April 29
Almirante	U. F. C.	Thursday	May 4
Prinz Aug. Wilhelm*	H.-A.	Saturday	May 6
Santa Marta	U. F. C.	Thursday	May 11
Prinz Sigismund	H.-A.	Friday	May 12
Thames	R. M.	Saturday	May 13
Metapan	U. F. C.	Thursday	May 18
Prinz Joachim*	H.-A.	Saturday	May 20
Zacapa	U. F. C.	Thursday	May 25
Prinz Eithel Friedrich	H.-A.	Friday	May 26
Trent	R. M.	Saturday	May 27

COLON TO NEW YORK.

Santa Marta	U. F. C.	Thursday	April 27
Prinz Sigismund	H.-A.	Tuesday	May 2
Thames	R. M	Tuesday	May 2
Metapan	U. F. C.	Thursday	May 4
Prinz Joachim*	H.-A.	Tuesday	May 9
Zacapa	U. F. C.	Thursday	May 11
Prinz Eitel Friedrich	H.-A.	Tuesday	May 16
Trent	R. M	Tuesday	May 16
Almirante	U. F. C.	Thursday	May 18
Prinz Aug. Wilhelm*	H.-A.	Tuesday	May 23
Santa Marta	U. F. C.	Thursday	May 25
Prinz Sigismund	H.-A.	Tuesday	May 30
Oruba	R. M	Tuesday	May 30

NEW ORLEANS TO COLON.

Cartago	U. F. C.	Wednesday	April 26
Turrialba	U. F. C.	Saturday	April 29
Parismina	U. F. C.	Wednesday	May 3
Abangarez	U. F. C.	Saturday	May 6
Heredia	U. F. C.	Wednesday	May 10
Atenas	U. F. C.	Saturday	May 13
Cartago	U. F. C.	Wednesday	May 17
Turrialba	U. F. C.	Saturday	May 20

COLON TO NEW ORLEANS.

Abangarez	U. F. C.	Thursday	April 27
Heredia†	U. F. C.	Thursday	April 27
Atenas	U. F. C.	Thursday	May 4
Cartago†	U. F. C.	Thursday	May 4
Turrialba	U. F. C.	Thursday	May 11
Parismina†	U. F. C.	Thursday	May 11
Abangarez	U. F. C.	Thursday	May 18
Heredia†	U. F. C.	Thursday	May 18
Atenas	U. F. C.	Thursday	May 25
Cartago†	U. F. C.	Thursday	May 25

Hamburg-American steamers leave Colon for New York via Kingston every Tuesday at 10 a. m., and those designated (*) call at Santiago, Cuba.

Steamers designated (*) make a local run from Colon to Bocas del Toro and Port Limon on alternate Wednesdays.

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships designated (†) for New Orleans via Port Limon and Puerto Barrios on Thursday at 4 p. m.; ships for New York via Kingston on Thursday at 11 a. m.; for Bocas del Toro on Monday at 6 p. m.

The Leyland line steamer *Asian* sails for Tampa on May 1.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, MAY 3, 1911. No. 36.

The Canal Record

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Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Cost of Construction Work.

A statement of construction expenditures up to March 31, 1911, inclusive, and a detailed statement of the cost of construction during the quarter ending March 31, is published in Part 2 of this issue of The Canal Record. It shows that the cost of excavation in the Central Division, and of concrete laying in both the Atlantic and Pacific Divisions reached its lowest point during the last quarter.

The cost of excavation in the Central Division was 56.92 cents a cubic yard for the quarter, and this includes a charge for plant and general expenses. During the month of March, when the excavation was the largest of record—2,026,087 cubic yards—the division cost was 37.61 cents, and the total cost, including plant arbitrary and general expenses, was 51.01 cents. Table No. 1 of the statement shows that the average cost of excavation in the Central Division up to March 31, was 88.01 cents a cubic yard, which is six cents below the cost per yard in the estimate submitted to Congress in October, 1908.

The cost of concrete placed in Gatun Locks during the quarter—231,907 cubic yards—was $6.6972 per cubic yard. This price included all expenditures and included likewise 3,314 yards of reinforced concrete, used in the construction of operating tunnels, at a cost of $14.276 per cubic yard. In March, 86,884 cubic yards of concrete were placed in the locks, and of this amount 1,585 cubic yards were reinforced concrete. Reinforced concrete cost $13.9034 a cubic yard, and the mass concrete $6.315 a yard; these costs are the lowest for concrete at Gatun Locks. The estimate made in October, 1908, placed the cost at $7.75 per cubic yard. The cost of crushed stone from Porto Bello, which forms part of the concrete at Gatun, shows a reduction of 23.11 cents a yard from the last quarter, the average cost being $2.1787, as against $2.4098 in the previous quarter. The cost of sand in the Atlantic Division during the quarter is slightly in excess of that for the previous quarter, but in March this sand was delivered at a cost of $1.5827 a cubic yard, which is a substantial decrease, as compared to the cost in previous months.

There is a slight increase in the cost of concrete at the Pedro Miguel Locks due to a smaller yardage, consequent upon a portion of the construction plant having been moved to the locks at Miraflores. The cost of $5.2131 per cubic yard for the quarter is, however, below the estimate of $8.25 a cubic yard made in October, 1908. At Miraflores, although only a part of the construction plant was in operation, 76,087 cubic yards of concrete were produced during the quarter at an average cost of $4.8434 a yard, as compared with $8.22 a yard, the estimate of October, 1908.

Chilibre River Caverns.

Extensive caverns have been found by hydrographers while gaging on the Chilibre River, and a thorough exploration of the underground passages will be made. The caverns are situated at the junction of the Chilibre and Cabulla rivers, just outside the Canal Zone, and about two miles directly east of Juan Mina village on the Chagres River. The elevation appears to be about 100 feet above sea level, 15 feet above the normal level of Gatun Lake.

The Slides in Culebra Cut.

The beginning of the rainy season finds the work in Culebra Cut better prepared than ever before to cope with the slides that may be accelerated by the wetting of the ground. The slides at Culebra have been moving during the dry season, and the break across the hill on which the house of the Chief Quartermaster was formerly situated has actually widened. It is believed that as soon as the mass of earth becomes water soaked it will begin to move on its rock bed into the Canal.

This is a part of the great slide on the west bank of the Cut, from which over 2,000,000 cubic yards were taken the past year, and which is estimated to contain two million cubic yards more; and has already included within its area several of the buildings in the village of Culebra. Three steam shovels are now taking material from the top of this slide, and four are excavating from the bottom. The shovels at work on the bottom of the slope are 10 to 110 feet outside the Canal prism. The third of the shovels on the top of the slide was set at work on May 1, and it will excavate a terrace or bench one step farther up the hill than the two that have been digging for some time past. This bench will extend along the edge of the slide from Rio Grande to near Culebra wye. A track will be laid along this bench and the spoil trains can be handled on a run-around, instead of being forced to back up to the shovels as at present. Seven buildings used as employes' quarters will be moved to make room for the new bench.

Work on the east bank opposite the village of Culebra is also in satisfactory condition. The shovels excavating at the toe of the slope are 80 to 130 feet outside the prism. A shovel will be set at work presently, making a cut from the slope along the edge of the old French dump, casting over into the Canal, thus lessening the weight of the slide.

At Cucaracha, the shovels digging at the toe of the big slide are 100 feet outside the Canal prism, and the material is moving slowly, but will probably move more rapidly during the rainy season.

Adjustment of Claim for Coconut Grove.

The claim of the Caribbean Coconut Company for damages to its coconut grove at Toro Point, incident to the construction of the Colon breakwater, has been adjusted for $33,964.85, and the lease of land from the Panama Railroad Company has been cancelled. This adjustment was made in accordance with the recommendation of a board of arbitration appointed for the purpose of determining the value of the coconut grove, under the following provision of the contract entered into with the company by the Panama railroad on August 26, 1893, and renewed on December 29, 1900:

> Article 6. If, during the time of this contract, the Lessor Company should require the land for its own use, this contract will thereupon be cancelled and the Lessor Company shall pay to the Lessees the value of the plants which are found thereon—this value being fixed by appraisers—but the buildings thereon shall be removed by the Lessees and without indemnity on the part of the Lessor Company.

The land leased under this contract was approximately 457 acres. The report of the appraisers states that there were found on the land 6,249 bearing coconut trees and 5,850 trees not bearing. In arriving at the value the appraisers determined a reasonable average number of coconuts that the grove would yield during each of the seven and two-thirds years remaining under the lease, a reasonable price per coconut obtainable in the Colon market, and the annual expense of maintenance, harvesting and bringing the nuts to the Colon market. From this data the net annual income from the grove was derived, and the cash value of the annuity was considered the measure of damages which should be paid to the coconut company by reason of the cancellation of the lease.

It was assumed that of the 5,850 nonbearing trees, 2,000 would have come into bearing during the remaining period of the lease, this assumption implying that 1,350 of the trees would never bear, and that 2,500 of the remainder would take the place of the trees now bearing, which, on account of age, accident, or disease would cease to bear. Data collected from various sources show that some trees bear as many as 200 coconuts a year,

NOTES OF PROGRESS.

(Continued.)

and that on the Isthmus some yield as many as 180 per year. The yield per tree on several small plantations along the Caribbean coast runs from 12 to 180, and the trees on Cristobal beach have given an annual yield for the past four years of from 45 to 75 nuts per tree. On data thus collected, it was decided that the annual gross crop from the grove would be 40 nuts per tree for 8,249 trees. The average price of coconuts on the Colon market for the 24 months of 1909 and 1910 was $24.04 per thousand, and on this basis, after making deductions for maintenance, rents, taxes, harvesting, hulling the crop, and delivery at Colon, the net annual income of the grove was determined as $6,092.35. After making a deduction of 8 per cent for interest, the total amount of the claim was agreed upon as $33,964.85, and this payment has been made by the Panama Railroad Company. The railroad will be reimbursed from Canal funds, because the damage is caused in the construction of the Canal. The appraisers were Major Chester Harding for the United States, and Robert Wilcox for the Caribbean Coconut Company.

Ancon Crusher.

DATE.	Hours worked.	Cubic Yards.
April 24	6:50	2,987
April 25	8:05	2,620
April 26	6:20	2,651
April 27	7:30	2,770
April 28	8:00	2,150
April 29	7:40	2,300
Total	44:25	15,478

Changes in Concrete Handling in Pacific Division.

It has been found advisable to change the method of the delivery of concrete in the center wall at the Miraflores Locks from that contemplated in the original plan. In the description of the concrete handling plants at Pedro Miguel and Miraflores Locks, published in THE CANAL RECORD of January 4, 1911, it was explained that the berm cranes on the sides of the Miraflores Locks would supply the concrete for the center, as well as the side walls, and that it was designed to send the material for the center wall down a transfer chute into the chamber crane buckets. Under the revised plan, the transfer chute will be dispensed with, and the berm cranes will provide concrete for the side walls only. Concrete for the center wall will be furnished by auxiliary mixers situated in an opening left for the purpose in the east side wall, and will be carried by narrow gage equipment to within reach of the chamber cranes, thence hoisted and carried into place by the longer arms of the cranes, working in a reverse position to that at Pedro Miguel. By this method, the berm cranes will be relieved of the burden of supplying concrete for both center and side walls, and the work, in consequence, will proceed with added rapidity.

The removal of the cranes from the Pedro Miguel Locks will also involve some changes in concrete handling there. The contractors are at present engaged in dismantling chamber crane No. 2 in the west chamber, and the plan is to remove two of the chamber cranes, then the remaining berm crane, and afterwards the other two chamber cranes. With the removal of all of the berm crane mixing machinery, it is proposed to utilize the auxiliary mixers in the west storage trestle to continue the concrete work remaining at that time, which will be principally wing wall construction. The material will be hauled to the place desired by the narrow gage equipment, elevated by derrick and automatically dumped. The east storage trestle at these locks has been abandoned, and is being taken down. The auxiliary mixer, formerly situated at the south end of the trestle, is to be set up on the west trestle.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Over 62 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of work on April 29, being 1,303,783½ cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending April 29, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers.		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
April 24	2,222	36:12	6	496	7:40	2	161¾	2,879¾
April 25	2,316	37:34	6	574	8:40	2	239¾	3,129¾
April 26	2,290	38:22	6	542	7:40	2	127	2,959
April 27	1,802	†34:50	6	326	3:10	2	159¾	2,287¾
April 28	1,928	‡37:51	6	520	10:00	2	93½	2,541½
April 29	1,980	36:38	6	682	10:00	2	130½	2,792½
*Portable mixers				491				491
Total	12,538	221:27	6	3,631	47:10	2	912	17,081
Previously reported								1,286,702½
Grand total								1,303,783½

*The 491 yards shown for the portable mixers are reinforced concrete, and were placed on the following days: April 24th, 89½ yards; April 25th, 74½ yards; April 26tb, 62½ yards; April 27th, 76½ yards; April 28th, 96½ yards; April 29th, 91½ yards.

†April 27—Delay of one hour and five minutes on the automatic railroad caused by a derailed car. Delay of one hour on the automatic road, caused by broken trolley in mixer building.

‡April 28—Cableway tower No. 2 idle from 8 a. m. on the 28th, to 2 p. m. on the 29th, account replacing main cable. Tower No. 1 derailed from 12 noon of the 28th to 7.30 a. m. on the 29th.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is about 76 per cent completed, 635,875 cubic yards, out of a total of 837,400, having been placed at the close of work on April 29. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-Cubic yard mixers			AUXILIARY PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. ½-cubic yard mixer.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete Placed.	Hours worked	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
April 24	698	12:00	2	708	15:00	2	127	11:00	2		1,533
April 25	560	10:00	2	604	12:50	2	156	13:00	2		1,320
April 26	620	12:00	2	680	14:50	2	189	13:75	2		1,489
April 27	484	10:00	2	574	12:50	2	139	11:75	2		1,197
April 28	690	12:00	2	402	9:50	2	119	8:25	1		1,211
April 29	692	12:00	2	474	11:00	2	50	3:50	1		1,216
Total	3,744	68:00	2	3,442	75:00	2	780	61:25	1.67		7,966
Previously reported										4,187	627,909
Grand total										4,187	635,875

MIRAFLORES LOCKS.

Over 15 per cent of the concrete for the system of two twin locks at Miraflores was in place on April 29, the total amount on that date being 213,949 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. ½-cubic yard mixer.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
April 24	878	21:67	4	244	5:00	2	699	45:50	6		1,882
April 25	796	22:75	4	208	4:00	2	711	43:50	6		1,762
April 26	1,014	18:92	4	228	5:00	2	644	37:00	5		1,928
April 27	1,114	20:83	4	172	3:00	2	658	36:50	5		1,999
April 28	954	19:67	4	280	6:00	2	569	35:50	6		1,803
April 29	990	25:00	4	224	5:00	2	418	20:50	3		1,632
							*205	27:84	.67		
Total	5,746	128:84	4	1,356	28:00	2	3,904	246:34	5.28		11,006
Previously reported										3,693	202,943
Grand total										3,693	213,949

*This 205 yards was mixed by a ½-yard mixer, the amounts for each day being: April 24th, 61 yards; April 25th, 47 yards; April 26th, 42 yards; April 27th, 55 yards.

SOCIAL LIFE OF THE ZONE.

Women's Clubs.

There will be a meeting of the executive board of the Canal Zone Federation of Women's Clubs in Cristobal on Monday afternoon, May 8. The executive board is composed of the eight officers of the Federation and the presidents of the several clubs.

The annual meeting of the Cristobal Woman's Club was held at the Commission clubhouse on Wednesday, April 26. The season opened on September 28 with a reception, and there have been 20 general meetings with programs, seven meetings of the executive board, and seven business meetings. The four departments have been active; the educational, philanthropy, and home departments each has provided two programs for the general meetings, and the meetings of the art and literature department, with programs following out a study of French art and history, have been open to the club members and well attended. The membership of 60 with which the year began, has been maintained. The Cecelian chorus organized in 1908, continues one of the features of the club. The officers elected for the coming year are, as follows: President, Mrs. Carl H. Elliott; first vice-president, Mrs. Thomas E. Brown, Jr.; second vice–president, Mrs. E. H. Colip; recording secretary, Mrs. R. W. Culbertson; corresponding secretary, Mrs. Charles M. Butters; treasurer, Mrs. Fred Guderian. A meeting of the executive board will be held on Wednesday, May 3, at which time the newly elected president will appoint the chairmen of the house and social committees, and the work for the coming year will be outlined. The club will resume meetings in September.

On Thursday, April 20, the Gatun Woman's Club held a farewell reception in honor of Mrs. A. P. McCulloch, who has been an active member of the club since its organization. Mrs. McCulloch has left for her home in the States.

The Paraiso Woman's Club will hold two meetings in May, after which the meetings will be discontinued until September. On May 24, the club will entertain the members of the Empire Woman's Club. There will be an exhibition of the Federation pictures and a program consisting of a paper on art, and musical numbers. Each member of the club is entitled to invite one guest.

A dance will be held by the Knights of Pythias in the Culebra clubhouse on Saturday evening, May 13, when the members of the Odd Fellows lodge, the Red Men, and their auxiliary order, the Daughters of Pocahontas, will be the guests.

The Mechanics Club of Empire will hold a banquet and dance at the Kangaroo hall on Saturday evening, May 6.

On Sunday, April 22, a meeting in honor of the ninety-second anniversary of the founding of the Independent Order of Odd Fellows was held at the Cristobal clubhouse. The program consisted of songs and speeches. There are five lodges in the Canal Zone, and one of the auxiliary order, the Daughters of Rebekah.

New Clubhouse for University Club.

The University Club of Panama, a majority of whose members are Canal or railroad employes, has purchased a lot about 60 by 100 feet, near the old fort on the sea wall in Panama, and will erect thereon a three-story, masonry clubhouse. Tentative plans provide for a building with an open third story or roof garden, rooms on the second floor, which can be made into one large room for dancing; and for kitchen and bowling alley on the ground floor.

Observance of Memorial Day.

EMPIRE, C. Z., April 22, 1911.

To all ex-service men of the Army, Navy, Marine Corps, or Revenue Cutter Service of the United States, now on the Canal Zone.

DEAR COMRADES: As has been our custom since 1908, orders have been issued from these headquarters, to observe with fitting ceremony, the day set aside for the purpose of paying tribute to our soldier dead, viz., Decoration Day, May 30.

In this we ask the cooperation of all ex-soldier organizations upon the Canal Zone, and especially do we invite all ex-service men who are not already connected with any organization of the kind.

We also invite any and all civic organizations to participate with us in this, what we hold to be a sacred duty, incumbent upon us.

It is therefore hereby earnestly requested that each organization designate at least one representative to confer with the undersigned, either by letter or 'phone, in order that the special details be arranged with satisfaction to all.

To observe this day with fitting service is not only our duty, but it will be an object lesson for good results among our associates of other nations, owing to the peculiar circumstances surrounding us.

It is hoped that the public schools of the Zone may join us in whatever manner is consistent with the management and surroundings.

Sincerely and fraternally yours,
E. W. BUCKLIN.
Department Commander Canal Zone, Army and Navy Union of the United States of America.

George Washington Memorial Association.

The George Washington Memorial Association has been organized for the purpose of erecting in Washington a building suitable for holding conventions, and with institutional features such as will promote the study of science and the arts. This building will cost about two million dollars, and it is proposed to raise this amount, and an endowment fund of five hundred thousand dollars, by public subscription. Literature on the subject, and pins, may be obtained at the Commission clubhouses.

Baseball Premiums.

The pennant for the club winning the greatest number of games in the Panama Canal Baseball League series, which came to an end with the benefit game played at Cristobal on April 2, will be awarded to the Commissary-Subsistence team. In addition, a prize in the form of a gold watch fob, presented by a firm of undergarment manufacturers in the United States, will be given to each member of the winning team. The Atlantic club has been awarded second place, and each member of that team will receive a bronze watch chain fob from the same firm.

Fancy Dress Ball.

The Catholic Club, in connection with St. Ferdinand's Church, Empire, held a fancy dress ball at Kangaroo hall on Saturday evening, April 29.

NEW STEAM SHOVEL TRIP.

Invention of Steam Shovel Engineer Stands Practical Test.

A steam shovel dipper trip devised by steam shovel engineer A. H. Geddes of the Central Division has been recommended for use on 40 dippers of the 95-ton steam shovels.

The present trip, or latch, by which the bottom of a steam shovel dipper is opened, to permit material to fall through, is operated by a rope in the hand of the steam shovel craneman, and under conditions frequently met, the force required is extreme. The device invented by Mr. Geddes consists of a steam cylinder the piston of which opens the latch on the door of the dipper through levers. Steam is admitted and exhausted from the cylinder through a three-way valve located on the boom beside the craneman's seat. A steam pipe extends from the valve along the boom opposite the dipper stick slot, and at the end of the pipe and on the cylinder are universal joints connected with a flexible hose.

At the request of the inventor, his device was given a trial on steam shovel No. 216 at work in Culebra Cut. The test was begun on January 18 and ended on March 31, and in this period the shovel excavated an average of 1,418 cubic yards a day. In the 60 working days from October 30, 1910, to January 12, 1911, this same steam shovel, working under practically the same conditions, using the old style trip, excavated an average of 939 cubic yards a day. Six other shovels, working under practically the same conditions, using the old style trip, during the period of the test excavated an average of 1,222 cubic yards a day.

The committee which considered the merits of the device consisted of Major T. C. Dickson, Inspector of Shops; W. H. Bates, Superintendent of Steam Shovel Repairs, and Lewis Webster, steam shovel engineer. In its report this committee says:

> While the effect of the device upon the amount excavated is based upon the operation of a single shovel, the above data indicate in the opinion of the committee, that the device increases the output by at least 100 cubic yards per working day. Taking the cost of the excavation at 67 cents a cubic yard, the value of the device would be $67 per day.
>
> It is estimated that the device can be made and applied in quantity for about $125 per shovel.
>
> Although the night repair crew made minor repairs on the device on 10 different occasions, it was not injured by dobeying. The engineer and craneman claim that repairs required by the device have caused no greater delays during working hours than the rope trip. Account was not kept of the actual cost of repairs made to the device, and the committee is of the opinion that the cost of repairs and maintenance of the device will appreciably exceed the corresponding costs with the rope trip, but that the cost of original installation and the cost of running repairs will be small in comparison with the value of the increased output, as estimated above.

The committee is of the opinion that the general principles and features of the device will result in an increase in output and will prove economical, and recommends its adoption and installation on all dipper sticks of 95-ton shovels on which four and five-yard dippers are used. It recommends also that the cylinder and piston which were used in the experimental device, and were taken from available material, be redesigned. Meanwhile, a thrust cylinder, now in stock, will be tested, and, if it proves satisfactory, will probably be used. If it does not prove satisfactory a cylinder and piston will be designed especially for the purpose.

CANAL MEDAL SERVICE BARS.

The following list contains the names of employes of the Isthmian Canal Commission, who completed six or four years' continuous service on the Isthmus, between January 1 and December 31, 1910, and for that reason are entitled to receive a medal bar. The list is now published in order that it may be carefully checked by those interested. Any omissions, errors in the spelling of names or in the dates from which bars become due, should be reported to the Office of the Chairman at Culebra, for correction. The list will be continued in the issue of May 10, 1911.

Name.	*Bar due.*
1910.	
Russell, William G	Jan. 1
Thompson, Charles G	Jan. 1
Andrews, Isaac H	Jan. 6
Huff, Fred L	Jan. 6
MacNair, Athol C	Jan. 6
Small, William H	Jan. 7
Corliss, Edwin M	Jan. 13
Gallagher, Harry J	Jan. 13
Heinrich, Amandus	Jan. 13
Howard, Robert C	Jan. 13
McCauley, Daniel J	Jan. 13
McCormack, William T	Jan. 13
Tannehill, John W	Jan. 13
Jones Christopher G	Jan. 15
Woodside, James	Jan. 16
Mohrmann, Harry	Jan. 17
Clark, Orrin M	Jan. 18
Holleman, Marshall S	Jan. 19
Albin, Walter	Jan. 20
Jerry, Edward N	Jan. 20
Johnson, Nelson R	Jan. 20
Rabbitt, David F	Jan. 20
Surles, Jesse C	Jan. 20
Canfield, Herman	Jan. 22
Herz, Simon	Jan. 22
Surles, Clarence C	Jan. 22
McGuigan, Joseph J	Jan. 23
Hammond, Robert S	Jan. 24
Luedtke, Charles L	Jan. 25
Galliher, Edward L	Jan. 26
Gruver, Fleetwood	Jan. 26
Wheeler, Charles P	Jan. 26
Mannoni, Lawrence	Jan. 29
McAllister, Frank I	Jan. 29
Rose, Charles	Jan. 29
Akers, Ralph P	Feb. 1
Harris, Charles H	Feb. 1
Kimberly, William T	Feb. 1
Stevens, George H	Feb. 1
Wiggins, Charles	Feb. 4
Leftwich, Robert B	Feb. 5
McCullough, Archie	Feb. 5
Vandeburgh, C. L	Feb. 5
Whitehead, Wilbur W	Feb. 5
Walker, Lewin W	Feb. 8
Boyle, Edward M	Feb. 9
Fisher, Allen D	Feb. 9
Mayrs, James A	Feb. 9
Pennell, George B	Feb. 9
Poole, Bernell C	Feb. 9
Roessner, William E	Feb. 9
Wahlquist, Oscar	Feb. 9
Wood, Benjamin F	Feb. 10
Anger, George F	Feb. 11
Carpprow, James M	Feb. 12
Grant, James	Feb. 12
Bourcy, S. L	Feb. 13
Phillips, Charles E	Feb. 14
Brown, Peter B	Feb. 15
Daly, Charles C	Feb. 15
Kunce, Oren H	Feb. 15
Thompson, Thomas C	Feb. 15
Hayden, Charles W	Feb. 21
Kuller, Benjamin F	Feb. 21
O'Leary, Joseph	Feb. 21
Stoddard, Charles	Feb. 21
Waters, Albert V	Feb. 21
Allyn, John C	Feb. 22
Bentley, Enoch A	Feb. 22
Farrell, Fred F	Feb. 22
Ferguson, Robert N	Feb. 22
Gould, Marcus L	Feb. 22
Kenney, Daniel	Feb. 22
Morrison, William F	Feb. 22
Smith, Walter B	Feb. 22
Steward, William S	Feb. 22
Stubner, Charles E	Feb. 22
Smith, Peter	Feb. 24
Barton, Robert C	Feb. 26
Cook, Charles B	Feb. 26
Hull, William G	Feb. 26
King, Milton P	Feb. 26
Taylor, Owen T	Feb. 26
Owry, Elzer M	Feb. 27
Alexander, Burchard B	Feb. 28
O'Connor, Charles	Mar. 1
Taber, John A	Mar. 2
White, Frank D	Mar. 5
Childs, William W	Mar. 6
Harrison, T. William	Mar. 6
LaRock, Herbert	Mar. 6
Hanson, Henry C	Mar. 8
Grier, Samuel, Jr	Mar. 10
Webster, Willis A	Mar. 10
McKenna, Roy M	Mar. 12
Dohrmann, Henry W	Mar. 17
Fechtig, Alexander C	Mar. 17
Gilmore, John E	Mar. 17
Kennedy, Edward J	Mar. 17
Shaughnessy, J. And'w	Mar. 17
Viberg, George L	Mar. 17
Lamster, Edward J	Mar. 20
Biggle, Harry E	Mar. 22
Burton, Stephen F	Mar. 22
Freedman, Sam D	Mar. 22
Hofman, Otto W	Mar. 22
Hornor, Benjamin F	Mar. 22
Murray, John J	Mar. 22
Tweed, Homer N	Mar. 22
Kimball, Melvin J	Mar. 23
Clardy, A. Basil	Mar. 24
Gardiner, Ralph	Mar. 24
Gibson, William C	Mar. 26
Hurley, Walter W	Mar. 26
McDonald, Patrick J	Mar. 26
Brady, Clyde	Mar. 31
Clark, Edward B	Mar. 31
Speary, Anna	Mar. 31
Taylor, William	Mar. 31
Mantooth, A	Apr. 1
Mealer, William O	Apr. 1
Brown, Perry F	Apr. 3
Tate, Dexter	Apr. 3
Reeder, Dennis F	Apr. 8
Hertz, Gustav C	Apr. 9
Dew, Harvey C	Apr. 10
Martin, William M	Apr. 10
McLean, Andrew L	Apr. 10
Nolan, Michael C	Apr. 10
Peterson, William B	Apr. 10
Lewis, Fitz J	Apr. 11
Hart, Henry A	Apr. 12
Blake, Arthur O	Apr. 16
Fernstrom, Thomas O	Apr. 17
Watson, George W	Apr. 18
Feurtado, Joseph P	Apr. 20
Albrecht, John E	Apr. 21
Carrigan, Thomas	Apr. 21
Mahoney, Patrick J	Apr. 21
Reed, Edward L	Apr. 21
Sergeant, William R	Apr. 21
Siggins, Michael	Apr. 21
Wilson, Charles M	Apr. 21
Cartwright, Charles H	Apr. 26
Conner, Frank W	Apr. 26
Grant, Ward E	Apr. 26
Krueger, Charles J	Apr. 26
MacPherson, Carrie L	Apr. 26
VanFleet, Minnie	May 2
Broderick, Timothy J	May 4
Chandler, Earl H	May 4
Woodman, Charles L	May 4
Ekedahl, Olof	May 5
Sheibley, Firmer H	May 7
Smith, Alfred	May 7
Campbell, George	May 10
Cooper, John C	May 11
Dorsey, William	May 11
Dozier, William T	May 11
Edmonson, Alonzo	May 11
Irwin, Mary B	May 11
Jennings, Samuel W	May 11
Lewis, John F	May 11
McCoy, William M	May 11
Major, John I	May 11
Montgomery, Henry	May 11
Polk, William F	May 11
Roberts, Frank R	May 11
Taylor, Willoughby M	May 11
Wickham, Clarence A	May 11
Davies, Richard M	May 15
Hartley, Edwin B	May 15
Miller, Edward C	May 15
O'Haire, William J	May 15
Rice, Willard	May 15
Wager, Andrew F	May 15
Windes, William N	May 15
Finley, Thomas	May 17
Brennan, Charles F	May 21
Brown, Daniel C	May 21
Cretors, Cheney F	May 21
Gayer, William C	May 21
Girdner, Harry	May 21
Heckman, Henry L	May 21
Lowe, George	May 21
McConahy, John	May 21
Mead, Charles H	May 21
Richmond, Vena E	May 21
Stoehr, George P	May 21
Clark, F. P	May 24
Deer, Edgar H	May 26
Duncan, Samuel	May 26
Earhart, Troy W	May 26
Kemp, James	May 26
Luther, Arthur T	May 26
McClinton, Joseph L	May 26
McCormick, Joseph	May 26
Maney, Frank L	May 26
Stewart, Malcolm	May 26
Zeiler, Avrum H	May 26
Bruner, Jasper H	May 31
Julien, Clark	May 31
Kane, John H	May 31
Payne, Burd F	May 31
Walker, Alfred J	May 31
Walling, Clifford T	May 31
Browne, Frank A	June 5
Cocoran, Anthony T	June 5
Cotton, Harold L	June 5
Gallagher, William P	June 5
Harrington, Charles R	June 5
Lawlor, William A	June 5
Tracy, Edmund H	June 5
Wood, Stanley W	June 6
Slayback, Edward	June 8
Chute, Frank E	June 9
Clifton, Robert B	June 9
Cosgrove, James	June 9
Farrow, William E	June 9
Kendall, Joshua W	June 9
Morley, John F	June 9
Nevius, Chester M	June 9
Pilson, Frank K	June 9
Randall, Ortez G	May 9
Underhill, Percy H	May 9
Wolverton, David R	May 9
Wuerz, Robert	May 9
Young, Thomas H	May 9
McLean, Leonard	May 13
Wilson, Matthew	May 14
Gorham, Frederick L	May 15
Jury, Frank J	May 15
Loulan, James A	May 15
Richmond, John	May 15
Robinson, R. R	May 15
Waldon, Frank K	June 15
Burnham, Howard D	June 20
Darling, George	June 20
Derhammer, Peter	June 20
French, Marvin L	June 20
Light, Ben F	June 20
Needham, William H	June 20
Wertz, Harry C	June 20
Lambert, Clarence K	June 21
Buckholdt, Joseph A	June 24
Dawson, George H	June 24
Dickinson, Albert M	June 24
McNamara, Gordon G	June 24
Moore, Edward	June 24
Smith, Julian C	June 24
Tabor, Charles S	June 24
Kennedy, Arthur W	June 25
Savinien, Francis P	June 27
Grinder, Joseph B	June 30
Mackintosh, Joseph	June 30
Westburg, John E	June 30
Whipple, C. Earl	June 30
Phillips, Jack	July 2
Deneen, Jack	July 4
Sturdivant, Roy H	July 4
Whaler, John W	July 4
Peterson, Walter	July 9
Betterley, William J	July 10
Bradney, Madison F	July 10
Cook, George H	July 10
Gayle, Edmund D	July 10
Gilbert, James J	July 10
McCormick, Edward B	July 10
Stoccbini, Thomas F	July 11
Bowlby, Richard F	July 12
Carroll, John M	July 12
Griley, George L	July 13
Alexander, William H	July 14
Brown, George	July 14
Cole, Lyman U	July 14
Conley, Richard S	July 14
Conley, William H	July 14
Hughes, Willam E	July 14
James, William M	July 14
Nelson, Richard M	July 14
Pulsifer, Chase	July 14
Staley, Frank S	July 14
Deeds, Edward F	July 16
Paris, Joseph	July 17
Beard, Frederick S	July 19
Brown, Warren J	July 19
Cook, Robert W	July 19
McLean, William P	July 19
Thomas, Trevor	July 19
Thompson, Ernest R	July 19
Keefe, John H	July 20
Payne, Louis W	July 21
Dibowski, Charles J	July 25
Logan, Orren	July 25
Peel, Samuel	July 25
Sexton, Charles B	July 25
Smith, Leroy	July 25
Webster, Lewis	July 25
White, James	July 25
Allison, Edward H	July 30
Bumgardner, Elton M	July 30
Cameron, Charles C	July 30
Durand, Louis A	July 30
Henkle, Benjamin F	July 30
Hunter, Abel A	July 30
Persons, Charles L	July 30
Kenney, Arthur F	Aug. 1
Slater, Arthur A	Aug. 2
Brown, Elizabeth C	Aug. 5
Grout, Floid E	Aug. 5
Matchette, J. Marion	Aug. 5
Palmer, Charles A	Aug. 5
Bath, Charles H	Aug. 9
Bradley, William E	Aug. 9
Miller, John B., Jr	Aug. 9
Million, George	Aug. 9
Munroe, John K	Aug. 9
Newman, Charles J	Aug. 9
Sommerville, Robert	Aug. 9
Sprecken, Harry V	Aug. 9
Thompson, Charles W	Aug. 11
Garvin, Patrick J	Aug. 13
Heeb, Emil	Aug. 13
Kefauver, Lloyd A	Aug. 13
Ramsey, George W. P	Aug. 13
Stanley, James O	Aug. 13
Driscoll, Michael J	Aug. 14
Shigley, L. M	Aug. 14
Simonson, Charles	Aug. 16
Brown, Walter G	Aug. 17
Barnes, William I	Aug. 18
Bowey, John	Aug. 18
Kimball, George W	Aug. 18
Lowe, Philip M	Aug. 18
Mack, Frank	Aug. 18
Parmeter, Frank S	Aug. 18
Rounsevell, Guy K	Aug. 18
Smith, Fred C	Aug. 18
McCollum, Charles S	Aug. 20
Curran, Taylor T	Aug. 23
Fox, Alonzo W	Aug. 24
Montgomery, James W	Aug. 24
Pelletreau, John L	Aug. 24
Picken, H. Ernest	Ang. 24
Schwartzenholzer, Jos	Aug. 24
Shippee, Arthur B	Aug. 24
Shrader, Willaim M	Aug. 24
Toone, Beverly B	Aug. 24
Townsend, Lester A	Aug. 24
Lewis, Edwin J	Aug. 27
Armistead, George M	Aug. 28
Naegele, Ferdinand	Aug. 28
Clark, Arthur H	Aug. 29
Grant, William S	Aug. 29
Guinther, John H	Aug. 29
Howe, Herbert H	Aug. 29
Loewy, Ignatz D	Aug. 29
Martin, James E	Aug. 29
O'Mealey, Bertrand J	Aug. 29
Rivers, Frank	Aug. 29
Rowley, William	Aug. 29
Schaefer, Joseph	Aug. 29
Schwah, William A	Aug. 29
Wilde, Abner P	Aug. 29
Witmer, Willaim H	Aug. 29
Church, Sydney	Sept. 4
Conlan, Archie B	Sept. 4
Connell, Charles	Sept. 4
Dombrowsky, Alexander	Sept. 4
Gilliam, Mace H	Sept. 4
Jorgensen, Einar L	Sept. 4
McCombs, William B	Sept. 4
McLaughlin, Thomas C	Sept. 4
Page, Harry F	Sept. 4
Per Lee, Charles A	Sept. 4
Sarvey, Wesley M	Sept. 4
Swan, Major F	Sept. 4
Veen, James T	Sept. 4
Illia, John D	Sept. 5
Jones, Annie L	Sept. 5
Stevens, Masters B	Sept. 5
Warner, John F	Sept. 5
Biesen, Philip A	Sept. 7
Barnett, James C	Sept. 8
Brown, Warren E	Sept. 8
Catto, John F	Sept. 8
Gibbs, Nathan G	Sept. 8
Luckey, John J	Sept. 8
McCollough, Derrill H	Sept. 8
McNutt, Edward E	Sept. 8
Metcalf, Benjamin F	Sept. 8
Metcalfe, Jesse C	Sept. 8
Pierson, Glen H	Sept. 8
Rutherford, William T	Sept. 8
Sadler, Joseph V	Sept. 8
Shaw, Charles A	Sept. 8
Squires, George B	Sept. 8
Strotz, Charles M	Sept. 8
Taylor, S. J	Sept. 8
Worrall, Lawrence P	Sept. 8
Culkin, William	Sept. 10
Cuoco, Nicholas J	Sept. 10
Lewis, Clifford	Sept. 10
Trask, H. R	Sept. 10
Turrell, Joseph	Sept. 10
Walraven, Francis W	Sept. 11
Earle, Harry E	Sept. 13
Eck, John	Sept. 13
Lewis, Charles L	Sept. 13
Lingle, George S	Sept. 13
Mahoney, John	Sept. 13
Perry, Walter L. G	Sept. 13
Pinney, Aurelian H	Sept. 13
Weber, Harry E	Sept. 13
Humphrey, Walter J	Sept. 15
Coffey, N. E	Sept. 16
Barnes, William I	Sept. 17
Bridges, Harry L	Sept. 17
Cushing, James E	Sept. 17
Drennan, Nelle	Sept. 17
Foster, William F	Sept. 17
Jones, Charles A	Sept. 17
Kennedy, John, Jr	Sept. 17
Major, Bessie	Sept. 17
Morris, George	Sept. 17
Roe, Martin	Sept. 17
Sweet, Arthur J	Sept. 17
Twombly, Henry W	Sept. 17
Vernon, Charles D	Sept. 17
Weidman, Frank	Sept. 17
Gorham, Luzella G	Sept. 18
Willson, James C	Sept. 20
Delano, Fred E	Sept. 21
Carter, William	Sept. 23
Lotz, Henry W	Sept. 23
Watson, William	Sept. 23
Williamson, Thomas G	Sept. 23
Johnson, James S	Sept. 24
Eason, Alex	Sept. 28
John, William W	Sept. 28
Koerner, Charles F	Sept. 28
Nolan, Matthew	Sept. 28
Pickett, Ira W	Sept. 28
Rowland, Bertrun F	Sept. 28

PANAMA RAILROAD TRAFFIC.

Conditions of New Agreement With Pacific Carriers.

The agreement between the Panama Railroad Company and the Pacific Mail and the California-Atlantic steamship companies, allowing the Pacific carriers 70 per cent of the total freight charge for carriage between New York and San Francisco, expired by notice on April 24. The officers of the Panama Railroad Company were authorized at a meeting on March 14 to effect a new agreement under the following conditions, and negotiations are in progress:

1. On all business moving between Pacific coast points and Atlantic ports, where the water transportation upon the Atlantic side is performed by the Panama Railroad Steamship Line, the division of rates shall be 40 per cent to the Panama Railroad Company and 60 per cent to the Pacific carrier.

2. On business where no part of the water haul is performed by the ships of the Panama Railroad Company the rate for rail transportation across the Isthmus will be, as follows:

On business proceeding to and from the ports of New York and Philadelphia 30 per cent of the through rate; on business proceeding to and from other Atlantic ports 25 per cent of the through rate.

3. The foregoing divisions are predicated upon classified tariffs to be agreed upon between officials of the Panama Railroad Company and of its cocarriers, and to be incorporated as a schedule hereto; and shall not be changed or reduced by any cocarrier, except upon the consent of the Panama Railroad Company.

4. No charge will be made at Balboa by the Panama Railroad Company for wharfage or craneage on traffic covered by this agreement.

5. The Panama Railroad Company will furnish to cocarriers under this agreement on the Pacific side coal at the same rate as is furnished at Balboa to the Isthmian Canal Commission.

6. In case that any cocarrier violates this agreement, the Panama Railroad Company shall have the privilege of withdrawing through billing privileges with respect to such cocarrier.

7. This agreement shall be effective for two years from April 24, 1911.

At a meeting of the board of directors held in New York on January 27, the officers of the company were directed "to reestablish a classified commodity tariff on eastbound coastwise business from Pacific coast ports to Atlantic coast ports of the United States to become effective as early as practicable after the expiration of the 90 days' notices of discontinuance of through billing relations with the present cocarriers on this traffic."

The officers were also authorized to enter into a contract for the stevedoring of cement for the *Ancon* and *Cristobal* at New York at the rate of 23 cents per ton on barrels and 26 cents per ton on bags, for a period of one year, the rate on barrels being a reduction of three cents per ton.

Claims for Sinking of Finance.

The proctors for the steamship *Georgic*, who have settled the claim against that ship growing out of the sinking of the "*Finance*" on November 26, 1908, have agreed to pay any of the crew who will apply for payment at the office of Messrs. Burlingham, Montgomery and Beecher, 27 William Street, New York, 65 per cent of the face of their claims as sworn to and on file in the court proceedings. The first offer of the owners of the *Georgic* was very much less than this, and the offer has been increased to the amount stated only as the result of much solicitation. This amount has been accepted by Capt. Mowbray, Officer Munroe, and others.

Sale of Useless Materials.

Authority has been granted the Chairman and Chief Engineer to sell materials no longer needed in the construction of the Canal, in the following letter from the Secretary of War under date of April 17:

> Referring to your letter of April 4, and to that part of Section 4 of the Act of Congress approved March 4, 1911, as follows:
>
> > That until the close of the fiscal year 1912, when any material, supplies and equipment heretofore or hereafter purchased or acquired for the construction of the Isthmian Canal is no longer needed, or is no longer serviceable, it may be sold in such manner as the Secretary of War may direct, and without advertising in such classes of cases as may be authorized by him.
>
> You are hereby authorized to sell, upon such terms as you may approve and without advertising, any material, supplies and equipment heretofore or hereafter purchased or acquired for the construction of the Isthmian Canal, which in your judgment is no longer needed or no longer serviceable, provided that when time permits, each transaction shall, before consummation, be submitted to the Secretary of War for approval, but that where time does not permit, such sales shall be made effective by you without such approval, the transactions to be subsequently reported to the Secretary of War.

PERSONAL.

Mr. William H. Jackson, with Mrs. Jackson, arrived on the Isthmus on April 25, to take up his duties as judge of the district court at Cristobal.

Mr. W. Whiting Andrews arrived in Panama on April 27 to assume his duties as secretary of the American Legation and charge d'affaires, *ad interim*, succeeding Mr. Charles Campbell, Jr., who has been transferred to Guatemala.

Missing Men.

Any one having information regarding the present whereabouts of Dennis Nugent, who at one time worked on the relocation of the Panama railroad, is requested to communicate with the postmaster at Ancon.

Any one having information regarding the whereabouts of Earle Jordan of Steubenville, Ohio, who may be on the Isthmus, will please communicate with the American Legation, Panama.

Information is desired regarding the whereabouts of Joseph W. Maguire who is supposed to be on the Isthmus of Panama. Address The Canal Record.

Health of School Children.

The medical inspection of the Canal Zone schools for white children, by a physician detailed especially for that purpose, was begun on February 1, under the conditions indicated in The Canal Record of March 1. It was directed, first, to an examination of the surroundings of the children in school, the light, ventilation, use of drinking cups, and instruction of teachers in means of detecting diseases in children, and the prevention of the spread of disease in the schools; second, the detection and prevention of contagious diseases, and a general physical examination of each child.

The recommendations in regard to the schoolbuildings are in general that better light be procured in the schoolrooms by removing the outer walls to within five feet of the floor and doing away with the screening of verandas; that greater care be taken in the keeping of the individual water cups now required in the schools for white children; that all schools be provided with playgrounds for the use of both boys and girls; that the question of instruction in sex hygiene be determined by the proper authorities before the opening of the next school year; that greater care be taken to prevent contagion in diphtheria; that the public drinking glass in the railroad trains be abolished, and that *follicular conjunctivitis* be considered a contagious disease and all pupils affected with it be excluded from school until they have received proper treatment.

The physical examination comprised tests of hearing, color perception, vision, examination of the nose, throat, and conjunctival, and of the head, face and other exposed surfaces for parasites and skin diseases. A record was also made of each child's robustness, complexion and physiognomy. In cases where children's parents especially requested it the examination was more thorough. Of the 887 children examined 409 or 46 per cent showed some defect. Of the 409, there are 213 or 24 per cent, who have decayed teeth; 124 or 14 per cent, defective vision; 25 or 2.8 per cent, defective hearing; 74 or 8.3 per cent, some disease of the nose and throat; 32 or 3.6 per cent, other defect or disease. There were 33 cases of *follicular conjunctivitis* (an inflammation of the outer membrane of the eye), 2 at Gorgona, 24 at Empire, 2 at Culebra, 3 at Paraiso, and 2 at Pedro Miguel. The children in need of treatment were directed to consult the proper physician, and they are complying with this advice.

Gatun Dam Spillway.

The concrete work in the spillway of Gatun Dam is over 59 per cent completed, 134,139 cubic yards, out of a total of 225,000, having been placed at the close of work on April 29. A statement of the amount laid each day last week, and of the total in place, follows:

Date.	Concrete Laid.	Hours worked.	Cubic Mixers. No.
	Cu. Yds.		
April 24	124	10:30	2
April 25	92	8:00	2
April 26	128	11:00	2
April 27	61	6:00	2
April 28	112	11:00	2
April 29	156	16:00	2
Total	673	62:30	2
Previously reported	133,466		
Grand total	134,139		

Porto Bello Crusher.

A statement of the work done at the Porto Bello crusher, by days, for the week ending April 29, follows:

Date.	Hours. worked.	Cubic Yards.
April 24	7:13	3,338
April 25	6:49	3,169
April 26	6:35	2,622
April 27	6:12	2,264
April 28	6:16	2,301
April 29	6:05	2,560
Total	39:10	16,254

Don José Buigas deDalmar has been appointed charge d'affaires and consul of the first-class for Spain in Panama, and has assumed the duties of that position.

On account of the stable labor conditions on the Isthmus and the fact that the force must be reduced as the work nears completion, it has been decided to discontinue the employment agency in New York.

Married.

MOORE-GAGE—At Matachin on April 29, Miss May Amanda Gage of New Haven, Conn., to Frank F. Moore of Pittsburg, Pa., the Rev. C. O. Purdy officiating.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

COROZAL.

The Corozal indoor baseball team was defeated by the Gorgona team on Saturday night, April 29. The following was the lineup: Gorgona—Ridge, Donahue, Hennon, Christianson, Kuentz, Wright, Sims, Hall. Corozal—Cuff, Lorah, Lofgren, Taylor, Cunningham, Ritter, Schlager. The score was 15 to 3.

A sacred concert will be given in the clubhouse on Sunday night, May 14.

CULEBRA.

A "smoker" was held at the Culebra clubhouse on Friday night at which there were singing, Indian club swinging, wrestling, and other entertainment features. A light lunch was served. About 120 men attended.

In the duckpin bowling match on Saturday night, April 29, the Gorgona team defeated the Culebra home team, the scores being as follows:

Gorgona.				Culebra.			
Seebt	86	85	85	Fredericks	83	113	94
Simka	82	96	110	Huttlem'r	90	95	80
Atkins	83	98	86	Kersey	87	84	89
Haggerty	98	87	89	Hill	78	92	83
Varenkamp	97	72	89	Case	100	95	91
Total	446	438	459	Total	438	479	437

Following are the duckpin high scores for the week ending April 29: Fredericks, 113; Baumer, 109; Cornthwaite, 100; Hill, 102; Brown, 113, 108, 106, 104; Case, 108, 107, 103, 102, 100.

The monthly prize for the high score in bigpins was won by Mr. Warner, score 224. Mr. Hill secured the prize for the high score in duckpins, score 119.

The Culebra indoor baseball team defeated the Empire team on Saturday evening, April 29, by a score of 22 to 15. Batteries: Empire—Young and Mullane; Culebra—Tupper and Cushing.

The results of the handicap chess tournament, which was finished last week, are as follows:

Name.	Won.	Lost.	Name.	Won.	Lost.
Bartlett	11½	2½	Putnam	6	8
Wilson	9½	4½	Goodenow	6	8½
Stearns	8	6	Strong	5	9
Warner	6½	7½	Dubois	4	10

EMPIRE.

Empire took three straight games of duckpins from Gatun on Saturday evening, April 29. The following was the score:

Empire.				Gatun.			
Davis	81	90	92	Bull	82	81	80
Pinney	89	89	83	Wells	84	86	80
Sawtelle	79	90	93	Wolf	84	90	70
Giavelli	92	73	97	Adams	79	78	73
Rodeghiero	93	82	84	Barte	105	87	87
Total	*434	424	449	Total	*434	422	390

*Empire won play-off of tie.

The following high scores were bowled during the week ending April 29: Duckpins—Potter, 133; Koperski, 100, 103; Goolsby, 117; Dakin, 108; Rodeghiero, 101, 111, 105, 103, 102, 102, 115, 104, 107, 108, 104; Rennan, 101, 102, 102; Pearson, 100; Parkis, 101, Gorham, 102, 113, 104; Witmer, 114; Furlong, 105; 105, 102; Gustavson, 105; Huson, 113;. Big pins—Parkis, 206.

The monthly handicap pool tournament was won by E. E. Barnes. There were 22 entries. Members are invited to register their names at once for the May tournament.

The literary society will hold a public meeting in the hall on Friday evening, May 12. There will be music by an orchestra, a debate on the subject of fortifying the Canal, and refreshments will be served following the program. Both men and women are invited to attend.

GORGONA.

George Arebart will lead the discussion club on Wednesday night, May 3, at 7.30; topic "Is it right to draw interest on money or effort?" All men and women invited. Admission free.

A. A. Simka gave an illustrated lecture on Sunday evening on the Holy Land. Mr. Simka lived there for 12 years.

The following 200, or over, scores were bowled during the month of April: M. Varenkamp, 220, 202, 211; Gaul, 215, 219; Bordt, 210; Roper, 207; Halderman, 201. Duckpin scores—Watkins, 117, 109; Schofield, 101; Sims, 101; Wheat, 105; Dunlop, 119, 100, 105; Kauffman, 100, 101, 103, 101; McWilliams, 103; Seebt, 104; Misal, 104; Simka, 101, 102; Atkins, 100; R. Varenkamp, 100; Ellsworth, 101, 109; Davis, 102.

GATUN.

At the meeting of the literary club on April 26, Henry Hughson gave a talk on "Poetry and music." Politics were discussed. Paul Case of Culebra sang bass solos, accompanied by Mrs. Hohnson.

A "smoker" will be held on Wednesday night, May 3. Franklin Matthews of the *New York Sun* will speak on "Incidents in the life of a newspaper correspondent."

Gatun defeated Cristobal in a game of indoor baseball on Saturday night, April 29, by the score of 25 to 11.

Gatun will play the Corozal team in the Gatun gymnasium next Saturday night.

The Gatun "Ds" took two out of three games from Empire on Saturday night, April 29, at duckpins. The scores were: Gatun—440, 410, 427; Empire—422, 446, 420.

The Boy Scouts spent a day with the Cristobal boys at Toro Point last Saturday.

On account of the interest displayed at a previous meeting, the "Life problem" club discussed for a second time the subject of "Divorce and marriage" on Sunday night, April 30.

CRISTOBAL.

Moving pictures will be shown on Friday night, May 5, for the first time since April 3.

The Cristobal and Gatun boys took an all-day outing at Toro Point on Saturday, April 29. Each boy had to cook his own meat and potatoes. A tramp, games, and a long swim were among the day's events.

The Cristobal literary club met on Wednesday night, adopted a constitution, and elected the following officers: President, C. H. Elliott; vice-president, A. R. Richards; secretary-treasurer, W. H. Wempe.

Basketball will be resumed this week after a rest of three months.

The Cristobal duckpin league series closed on April 27, with the following scores:

	Played.	Won.	Lost.	Per cent.
Com.-Subsistence	54	35	19	.648
Quartermaster	54	31	23	.574
Miscellaneous	54	27	27	.500
Dry Dock	54	15	39	.277

Highest average, T. A. Sullivan, 92.15; highest score, L. A. Louch, 136.

Scores of 100 and over in duckpins were made last week, as follows: Furlong, 102, 110, 105, 108, 110; DeCora, 123, 101, 105; T. Burns, 111; Sullivan, 109; Bullard, 110; Smith, 109, 103, 102; Herring, 100, 103, 108, 106; Barrett, 102, 121, 105; Jacques, 101, 102; Wheeler, 103; Hess, 102; Louch, 104.

The standing of the Isthmian Duckpin League on April 30, 1911 was, as follows:

	Played.	Won.	Lost.	Per cent.
Cristobal	12	9	3	.750
Empire	12	7	5	.583
Gorgona	12	6	6	.500
Culebra	18	9	9	.500
Gatun	18	5	13	.277

Zone Liquor Licenses.

ISTHMIAN CANAL COMMISSION.
DIVISIONS OF POSTS, CUSTOMS AND REVENUES.
ANCON, C. Z., April 26, 1911.

The Isthmian Canal Commission, at its meeting at Culebra on April 15, authorized the issuance of liquor licenses in the Canal Zone for the year commencing July 1, 1911, at Rio Grande, Culebra, Empire, Las Cascadas, Bas Obispo, Matachin, Gorgona and Gatun.

The areas within which saloons may be located are, as follows:

Rio Grande: On the west side of the old line of the Panama railroad, facing the railroad, in line with the saloons at present licensed there.

Culebra: Lots 11 to 19, inclusive, block 1; lots 12 to 20, inclusive, block 2; lots 1 to 9, inclusive, block 4; lots 2 to 10, inclusive, block 5, West Culebra.

Empire: The area bounded by Second avenue, Main street, Seventh avenue and Front street.

Las Cascadas: The section known as the new town, where private houses are now located, on the west side of the Panama railroad.

Bas Obispo: On the west side of the Panama railroad, in line with the buildings in which saloons are now located.

Matachin: On the main street of the town, on the north side of the Panama railroad, in line with the buildings in which saloons are now located.

Gorgona: Area bounded by Second street, avenue "E", Fifth street and Central avenue (or avenue "A"); but no saloons will be permitted to face on Central avenue.

Gatun: All of blocks 7 and 8; lots 1 to 5, inclusive, block 2; lots 1 to 5, inclusive, block 4; and lots 1 to 4, inclusive, block 6, of the new town laid out by the Panama Railroad Company.

All of the areas described are more particularly indicated on maps which may be seen in the office of the Collector of Revenues, Ancon, or in the offices of the Deputy Collectors of Revenues at Empire, Gorgona and Cristobal.

The designation of the areas hereinbefore made, however, shall not be construed as prohibiting the renewal of the licenses of dealers now engaged in the retail sale of liquor, under proper license, in any of the towns mentioned, outside of the areas designated—the places of business of all such dealers outside of the areas described being shown on the maps hereinbefore referred to.

The number of saloons to be located in each town within the area designated shall not be restricted, but each reliable and responsible applicant shall be granted a license for the sale of liquor within any such described area, in conformity with the regulations, upon the payment of the necessary fee.

Applicants for licenses are invited to submit their applications prior to June 1, 1911, in conformity with the regulations adopted by the Isthmian Canal Commission, April 27, 1907, and amendments.

TOM M. COOKE, *Collector of Revenues.*

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Gatun, C. Z., on Sunday, May 7, at 5 p. m. The program follows:

1	March—*Imperial*	Bagley
2	Selection—*Woodland*	Luders
3	Valse Tres Lente—*Amoureuse*	Berger
4	Overture—*Zampa*	Herold
5	Idyl—*Love's Message*	Brooks
6	Popular Medley—*Amina*	La Farge
7	Serenade—*Andalusian*	Bonnet
8	Descriptive—*A Hunting Scene*	Bucalossi
9	March—*Independentia*	Hall

CHAS. E. JENNINGS, *Musical Director.*

The next concert will be given at the Hotel Tivoli, Ancon, on Sunday, May 15, at 7.30 p. m.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending May 10, 1911 (75th meridian time):

DATE.	High.	Low.	High.	Low.	High.
	A. M.	A. M.	A. M.	P. M.	P. M.
May 4	......	1.30	7.37	2.00	7.55
May 5	......	2.25	8.35	3.01	9.00
May 6	......	3.28	9.43	4.13	10.14
May 7	......	4.40	11.00	5.28	11.38
			P. M.		
May 8	......	5.57	12.14	6.38	......
May 9	12.53	7.01	1.18	7.37	......
May 10	1.55	7.57	2.10	8.27	......

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, April 29, 1911. All heights are in feet above mean sea level.

DAY AND DATE.	STATION.				
	Vigia.	Alhajuala	Gamboa.	Bohio.	Gatun Lake.
Sun. April 23	126.2	92.7	45.3	13.9	13.9
Mon. April 24	126.1	92.6	45.2	13.7	13.7
Tues. April 25	132.0	96.8	49.3	13.6	13.6
Wed. April 26	128.9	95.4	49.2	14.3	13.8
Thurs. April 27	126.8	93.4	45.9	13.9	13.8
Fri. April 28	127.8	94.0	46.7	13.9	13.8
Sat. April 29	126.7	93.5	46.3	14.0	13.9
Height of low water	125.0	92.0	44.0		

Rainfall from April 1 to 29, 1911, Inclusive.

STATIONS.	Maximum in one day	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	1.55	25	5.14
Balboa	1.53	24	5.62
*Miraflores	1.05	4	2.50
Pedro Miguel	1.44	8	4.90
Rio Grande	3.13	25	6.55
Central Section—			
Culebra	2.84	25	4.60
*Camacho	2.85	25	6.36
Empire	2.27	25	3.84
Gamboa	1.70	25	3.81
*Juan Mina	1.45	25	2.33
Alhajuela	2.26	25	4.03
*El Vigia	1.33	25	2.07
*Gorgona	1.40	7	3.14
San Pablo	1.32	8	3.82
Tabernilla	2.08	8	4.65
Bohio	1.68	12	4.81
*Monte Lirio	1.10	12	5.07
Atlantic Section—			
Gatun	.98	24	5.14
*Brazos Brook	.71	28	3.78
Cristobal	.67	12	2.81
Porto Bello	1.78	16	†6.48
*Nombre de Dios	.87	4	5.87

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight. †To 5 p. m., April 28.

OFFICIAL CIRCULARS.

Acting Examiner of Accounts.

CULEBRA, C. Z., April 25, 1911.

CIRCULAR No. 388:

Effective this date, Mr. T. L. Clear is appointed Acting Examiner of Accounts.

GEO. W. GOETHALS, *Chairman.*

Cumulative Leave.

CULEBRA, C. Z., April 26, 1911.

CIRCULAR No. 132-J:

The following extract from the minutes of the one hundred and sixtieth meeting of the Commission, held April 15, 1911, amending the resolution adopted at the one hundred and fifty-eighth meeting of the Commission respecting cumulative leave for monthly employes, is published for the information of all concerned:

Resolved, That a monthly employe who has earned forty-two days' leave of absence with pay may accumulate additional leave at the rate of three and one-half days for each month's actual service in excess of the twelve months, not to exceed eighty-four days in the aggregate; *Provided*, That not more than forty-two days' leave with pay will be granted at one time, unless prior notice shall be given that the employe's service is to terminate at the expiration of such leave, either by acceptance of resignation or by discharge on account of reduction of force; and, *Provided further*, That, except upon such termination of service, leave of absence with pay must be entered upon during the period extending from two months before to two months after the beginning of each service year.

Resolved Further, That hereafter a monthly employee who has rendered satisfactory service for six months or more for which he has received no leave of absence, and whose service is terminated by acceptance of resignation or by discharge on account of reduction of force, may be granted leave with pay at the rate of three and one-half days for each full month's such service.

Resolved Further, That hereafter an employe whose service terminates while on leave of absence, either by acceptance of resignation or by discharge on account of reduction of force, may be paid for the full period of his leave without returning to the Isthmus.

GEO. W. GOETHALS.
Chairman and Chief Engineer.

Leave for Employes Unaccustomed to Tropics.

CULEBRA, C. Z., April 26, 1911.

CIRCULAR No. 132-K:

The following extract from the minutes of the one hundred and sixtieth meeting of the Commission, held April 15, 1911, is published for the information of all concerned:

Resolved, That employes born in the tropics, who are otherwise entitled to the privilege of leave and who have spent the greater part of their lives in the temperate zones, are to be regarded as unaccustomed to a tropical climate within the meaning of those paragraphs of the general conditions of employment adopted at the one hundred and twenty-ninth meeting of the Commission which bear on leave of absence and sick leave.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Disposition of Buildings.

CULEBRA, C. Z., April 27, 1911.

CIRCULAR No. 293-A:

The board appointed in Circular No. 293 to recommend the disposition of buildings to be destroyed or removed is hereby abolished. The Chief Quartermaster will in future report on the disposition to be made of buildings, subject to approval by the Chairman. If any material or buildings are to be sold, appraisal will be made by the Surveying Officer.

GEO. W. GOETHALS, *Chairman.*

Promotions for Steam Shovel Craneman to Engineer.

CULEBRA, C. Z., May 1, 1911.

CIRCULAR No. 387:

The following rules shall hereafter govern promotions from the grade of steam shovel craneman to the grade of steam shovel engineer:

1. Except as herein provided, cranemen will be promoted in the order of seniority.

2. To qualify for promotion a craneman must demonstrate his ability to run a shovel in a six day tryout.

3. During this tryout the candidate for promotion shall have no special guidance or instruction, but an experienced craneman shall be assigned to his shovel for at least the first three days.

4. The candidate for promotion will be started on earth or other easy digging, if practicable, but before the six days have expired he may be transferred to rock work, which he must be competent to handle.

5. When the candidate for promotion has worked six days as an engineer, the superintendent of steam shovel repairs shall examine and report on the condition of his shovel, and the superintendent of construction shall report on his efficiency. From these reports, considered in connection with the daily shovel reports, the division engineer will determine whether the candidate is qualified for promotion.

6. A craneman will not be given an opportunity to break in as an engineer unless he will sign a written agreement to accept promotion to any vacancy which may occur in the grade of engineer, and to go to any station on the Isthmus where his services may be required.

7. In order that there may be always a man available to fill immediately any vacancy which may occur in the grade of engineer, the three senior cranemen shall be allowed to qualify for promotion. If one of these is found ineligible or refuses to sign the agreement referred to in paragraph No. 6, the man standing fourth on the seniority list will be permitted to qualify, and so forth, in order that there may be always three men available for promotion.

8. When a vacancy occurs in the grade of engineer, promotion shall be tendered to the senior qualified craneman unless he is absent from the Isthmus, sick, or otherwise incapacitated for immediate service, in which case promotion shall be tendered the second man in order of seniority, and so forth.

9. A craneman will not be allowed engineer's pay during his six day tryout, nor during any temporary assignment to perform the duties of an engineer, except that a substitute may be allowed engineer's pay when his temporary assignment lasts for 30 days or more.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Charges for Electric Current.

CULEBRA, C. Z., April 28, 1911.

CIRCULAR No. 336-B:

Effective May 1, and until further notice, the charges for electric light and current furnished by the Mechanical Division to all departments and divisions, including the Panama Railroad Company, will be as follows:

40 cents per month for each 16 c. p. lamp.

2½ cents per kilowatt hour for power and lights on motor basis, where the Mechanical Division does not furnish lamp renewals.

Other rates fixed by Circular No. 336-A of December 30, 1910, or as specially authorized as an exception thereto since that date, will remain in effect.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Assignment to Duty.

ISTHMIAN CANAL COMMISSION.
DEPARTMENT OF CIVIL ADMINISTRATION.
EXECUTIVE OFFICE.
ANCON, C. Z., April 29, 1911.

CIRCULAR No. 103:

Judge William H. Jackson, having arrived on the Isthmus pursuant to appointment issued to him in Washington, is hereby assigned to the Cristobal District Court for one month from May 5, 1911, after which he is assigned to the duties of Senior District Judge, vice M. C. Rerdell assigned to the Cristobal District Court.

GEO. W. GOETHALS,
Chairman of the Commission.

Injury in Course of Employment.

CULEBRA, C. Z., April 29, 1911.

CIRCULAR No. 235-E:

The Act of Congress approved May 30, 1908, as amended by Section 5 of the Act of March 4, 1911, granting to certain employes of the United States the right to receive from it compensation for injuries sustained in the course of their employment, applies to all employes under the Isthmian Canal Commission when injured in the course of their employment, and provides that claims for compensation on account of injury or death resulting from accident occurring on or after March 4, 1911, shall be settled by the Chairman of the Isthmian Canal Commission, who shall, as to such claims and under such regulations as he may prescribe, perform all the duties devolving upon the Secretary of Commerce and Labor under the Act of May 30, 1908. In all cases where an injury results in death, claim for compensation on account thereof must be filed within one year after such death.

In accordance with the authority conferred upon me by said Act of March 4, 1911, the following regulations are prescribed for the purpose of making effective the provisions of law referred to:

1. An employe injured in the course of his employment must at once report the injury to his foreman, or other immediate superior, if he is able to do so, giving a statement of the facts and the names of witnesses, if any. In case disability does not result until some time after the injury is received, the injured employe shall notify his foreman, or other immediate superior, promptly upon the beginning of such disability.

2. The foreman, or other immediate superior, of an employe injured in the course of his employment shall at once forward the preliminary report of injury (Form 177 C. E.) to the head of his department or division. The report shall be held by the head of the department or division until the employe returns to duty, if within 15 days, or until 15 days have elapsed from the date of the injury.

3. If the time lost does not exceed 15 calendar days, Form 206 C. E. shall be prepared by the head of the department or division and forwarded in triplicate to the Chairman for his action, accompanied by the certificate of the attending physician. Upon the return of this form approved, payment will be made on the regular pay roll as "Meritorious sick leave" in accordance with the regulations now in force, made under authority of the Act of February 24, 1909.

4. If the employe is still incapacitated for duty on the sixteenth day after the injury is received, or disability commenced, "Immediate report of injury" (Form X 155) shall be prepared by the head of the department or division and forwarded not later than the seventeenth day after such injury is received, or such disability commenced, to the Claim Officer, Empire, C. Z. In the event that the head of department or division reports that the employe was injured out of the course of employment or through negligence or misconduct, such reporting officer shall make an additional statement, giving the reasons for his conclusion, and forward same with this form.

5. Whenever an employe, concerning whom an "Immediate report of injury" (Form X 155) has been forwarded to the Claim Officer, returns to duty, a "Report of termination of disability" (Form X 156) shall be immediately sent to the Claim Officer, accompanied by a certificate of the attending physician.

6. The claim for compensation of an injured employe will be made on Form X 158, which will be furnished to the claimant by the Claim Officer, who will advise as to the preparation thereof.

7. The Chairman's approval and certification of all claims for compensation on account of injuries which are clearly within the terms of the Act, and concerning which no question as to their validity has been raised, will be made upon a pay roll prepared by the Claim Officer, under the direction of, and be recommended for approval by, the Examiner of Accounts, immediately after the close of the calendar month in which the completed claim was filed.

8. All claims for compensation on account of injuries about which any question as to their validity has been raised shall be submitted to the Chairman by the Examiner of Accounts with a brief of the facts in the case and a recommendation as to the action to be taken. If such claims are approved, the names of the claimants shall be added to the next pay roll covering injured employes.

9. In all cases where an employe is accidentally killed the head of his department or division shall make prompt report thereof direct to the Claim Officer on Form X 157.

10. When an employe entitled to compensation under the Act of March 4, 1911, dies as a result of an injury received in the course of his employment, and his widow, child or children under 16 years of age, and dependent parents, or any of them, desire to claim payment under the Act, they shall be furnished with blank form for compensation, Form X 159. This form must be properly completed. All persons who might be beneficiaries under the Act must sign, or reason be given for not signing, and the claim duly executed, returned to the Claim Officer within one year after the date of death. All claims for compensation on account of death shall be submitted by the Examiner of Accounts to the Chairman with a brief of the facts and a recommendation as to the action to be taken. If the Chairman approves payment of compensation to more than one person, he will designate the portion to be paid to each claimant. Payments of compensation on account of death shall be made on rolls separate from the regular injury pay roll, to be prepared by the Claim Officer.

11. The report of injury cases (on Form X 99) as at present being made to the Claim Officer by Ancon and Colon Hospitals and all line dispensaries, shall be continued, and all such reports shall be mailed not later than noon on Monday of each week.

12. The employe who at present is designated as Claim Officer for the Isthmian Canal Commission, under the supervision of the Examiner of Accounts, is charged with jurisdiction over all matters of detail arising in connection with claims under the Act of May 30, 1908, as amended by the Act of March 4, 1911; with the making of all necessary investigations in connection therewith; with the preparation of pay rolls for the payment of compensation under the Act; with the keeping of records pertaining to claims for compensation; and with such other duties as are at present performed by him in connection with claims arising under the Act of May 30, 1908, or as may be hereafter assigned to him.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

COMMISSARY DEPARTMENT.

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning May 1.

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	6
Shoulder, neck trimmed off, (4 pounds and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg, (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing, per pound	10
Shoulder, for roasting (not under 4 pounds), per pound	12½
Chops—Shoulder, per pound	16
Chops, per pound	24
Loin for roasting, per pound	24
Cutlets, per pound	28
Pork—Loin chops or roast, per pound	14
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	8
Corned, per pound	12, 14, 16
Chuck roast (3 pounds and over), per pound	12
Pot roast, per pound	12½
Rib roast, second cut (not under 3½ pounds), per pound	16
Rib roast, first cut (not under 3 pounds), per pound	18
Sirloin roast, per pound	19
Rump roast, per pound	19
Porterhouse roast, per pound	20
Steak, chuck, per pound	12½
Round, per pound	13
Rib, per pound	18
Sirloin, per pound	19
Rump, per pound	19
Porterhouse (not less than 1½ pounds), per pound	20
Tenderloin (Western) per pound	24
Tenderloin (Native), per pound	30

MISCELLANEOUS.

Caviare, Russian in ¼-lb. jars, per jar	85
Livers—Beef, per pound	7
Calf, each	60
Half, each	30
Sausage—Pork, per pound	15
Bologna, per pound	10
Frankfurter, per pound	12
Lieberwurst, per pound	10
Sweetbread —Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	23
½-dozen, only	12
Bluefish, fresh, per pound	14
Halibut, fresh, per pound	15

POULTRY AND GAME.

Chickens—Fancy roasting, milk fed, large, each	1.25
Fancy roasting, milk fed, med., each	1.00
Fancy roasting, corn fed, about 4½ pounds, each	90
Fowls, each	60, 70, 80, 90, 1.00
Ducks, Western, about 4½ pounds, each	1.00
Long Island, each	1.30
Ducks, Long Island, each	1.10
Broilers,, milk fed, each	60
corn fed, each	55
Turkeys, per pound	26
Squabs, each	35
Capons	2.10
Rabbits, dressed, each	40
Pheasants, each	50
Partridges, each	50
Grouse, each	50

CURED AND PICKLED MEATS.

Ham—German, Westphalia, per pound	36
Sugar cured, per pound	18
Sliced, per pound	20
Half, for boiling, per pound	19
Boiled, per pound	25
Hocks, per pound	18
Picnic, Winchester, per pound	15
Bacon—Breakfast, whole piece, per pound	23
Breakfast, sliced, per pound	24
Beef, salt, family, per pound	9½
Pork, salt family, per pound	14
Ox Tongues each	75
Pigs' feet, per pound	9
Tongues, per pound	14
Sliced bacon in 1-pound tins, per tin	30
In 1-pound jars, per jar	30

DAIRY PRODUCTS.

	Price.
Butter—Creamery special, per pound	32
Cheese—Roquefort, per pound	38
Philadelphia cream, small cake	10
large cake	18
Young America, per pound	18
Cheese—Swiss, per pound	26
Edam, each	1.00
Camembert, in small tins, tin	14
Neufchatel, cake	6
Gouda, per pound	34
Milk (Inspected or certified), per bottle	**25
(Pasteurized), bottle	**18
Buttermilk, bottle	**15
Ice cream, quart	‡25
½-gallon	‡50

VEGETABLES AND FRUITS.

Beets, per pound	3
Celery, per head	8
Carrots, per pound	3
Cabbage, per pound	*2
Cucumbers, per pound	10
Egg plant, per pound	7
Lettuce, per pound	10
Onions, per pound	5
Potatoes, white, per pound	2½
sweet, per pound	2
new, per pound	4½
Parsnips per pound	3
Peppers, green, per pound	10
Squash, per pound	6
Tomatoes, per pound	*6
Turnips, per pound	3
Yams, per pound	3
Apples, fancy table, per pound	10
Grapefruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12
Pineapples, each	20
Pears, per pound	10

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*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Misdirected Letters.

ANCON, C. Z., May 3, 1911.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received in the office of the Director of Posts and may be secured upon request of the addressee:

LETTERS UNCALLED FOR APRIL 26.

Aikin, J.
Anderson, George A. T.
Ayre, Jimmy
Coleman, Miss Mable
Craven, Mrs. Mary
Craveen, Marie Catherine
Craven, Hugh
de Jough, Gilbert
Folcey, A. E.
Foster, Miss Lorraine
Fox, Miss Eva
Geisshardt, Willie
Goodman, M.
Gorney, Jos. F.
Hart, Mrs. M.
Hilders, Jos. A.
Huntington,, Mrs. E. Irving
Jackson, C. M.
Johnston, Wm. C.
Jones, J. H.
Kenworthy, R. A.
Knowles, Mrs. Horace G.
Lee, Joe D.
MacNeil, Miss Lena
McElroy, Mrs. N. G.
McGrath, F. S.
Nix, W.
Osmond, George
Orza, Manuel
Painter, Joe H.
Shroyer, Earl
Smith, Archibald R.
Shand, Cyril
Thomas, Arthur
Vance, George Louis
Wood, C. Harold
Zamova, Vincente

LETTERS UNCALLED FOR MAY 3.

Avery, R. E.
Castro, B. (2)
Clarke, Lieut. Thomas Stanley
Craft, Charles P.
Crespi, Miss Clelia
Dickerson, Leonard R.
Ermentrout, Mrs. Robert
Forman, J. C.
Forte, William
Garrison, A. S.
Graf, Jack
Graham, F. L.
Grier, William
Hake, Jacob A.
Hall, Mrs. Wells
Harris, Ernest A.
Keen, Asa L.
Kierman, J. C.
Lanlli, C. W.
Louden, H. P.
Maloney, Martin
Noltee, C. M.
Pearce, Mrs. Harry Ash
Pierson, Harry M.
Simmons, Miss Bessie
Stone, Hugh J.
Sweek, Frank
Symms, Maurace
Tracey, James
Westcott, Fred M.
Williams, C. H., Mrs.
Young, Julius C.

Sale of Public Buildings.

OFFICE OF CHIEF QUARTERMASTER.
ISTHMIAN CANAL COMMISSION.
CULEBRA, C. Z., May 1, 1911.

Sealed proposals for the purchase of any or all of one hundred and forty-three (143) buildings located along the line of the Panama Railroad Company, between Bohio and Cartagenita, will be received here until 3 p m., Monday, May 15, 1911, and then opened. Information furnished on application to district quartermasters, or to this office. Envelopes containing proposals should be endorsed "Proposals for the purchase of buildings," and addressed to Lieut.-Col. C. A. Devol, Chief Quartermaster, Culebra, C. Z.

The following vessels arrived at or departed from the port of Balboa during the week ending April 29, 1911:

Arrivals—April 22, *Oberon*, from Port Harford; April 23, *Newport*, from San Francisco; *Mantaro*, from Callao; April 24, *Fenwick*, from San Francisco; April 25, *Peru*, from Guayaquil; April 26, *Palena*, from Valparaiso.

Departures—April 22, *Chile*, to Guayaquil; April 23, *Mackinaw*, to San Francisco; April 24, *Pennsylvania*, to San Francisco; *Mexico*, to Valparaiso.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Allianca	P. R. R.	Saturday	April 29
Panama	P. R. R.	Saturday	May 6
Advance	P. R. R.	Friday	May 12
Panama	P. R. R.	Thursday	May 18
Allianca	P. R. R.	Wednesday	May 24
Colon	P. R. R.	Wednesday	May 31
Advance	P. R. R.	Tuesday	June 6
Panama	P. R. R.	Monday	June 12
Allianca	P. R. R.	Saturday	June 17
Colon	P. R. R.	Saturday	June 24
Advance	P. R. R.	Friday	June 30

CRISTOBAL TO NEW YORK.

Cristobal	P. R. R.	Thursday	May 4
Ancon	P. R. R.	Wednesday	May 10
Allianca	P. R. R.	Friday	May 12
Colon	P. R. R.	Thursday	May 18
Advance	P. R. R.	Wednesday	May 24
Panama	P. R. R.	Wednesday	May 31
Allianca	P. R. R.	Tuesday	June 6
Colon	P. R. R.	Tuesday	June 13
Advance	P. R. R.	Sunday	June 18
Panama	P. R. R.	Saturday	June 24
Allianca	P. R. R.	Friday	June 30
Colon	P. R. R.	Thursday	July 6
Advance	P. R. R.	Wednesday	July 12

NEW YORK TO COLON.

Prinz Eitel Friedrich	H.-A.	Saturday	April 29
Clyde	R. M.	Saturday	April 29
Almirante	U. F. C.	Thursday	May 4
Prinz Aug. Wilhelm	H.-A.	Saturday	May 6
Santa Marta	U. F. C.	Thursday	May 11
Prinz Sigismund	H.-A.	Saturday	May 13
Thames	R. M.	Saturday	May 13
Metapan	U. F. C.	Thursday	May 18
Prinz Joachim	H.-A.	Saturday	May 20
Zacapa	U. F. C.	Thursday	May 25
Prinz Eitel Friedrich	H.-A.	Saturday	May 27
Trent	R. M.	Saturday	May 27

COLON TO NEW YORK.

Prinz Sigismund	H.-A.	Monday	May 1
Thames	R. M.	Tuesday	May 2
Metapan	U. F. C.	Thursday	May 4
Prinz Joachim	H.-A.	Tuesday	May 9
Zacapa	U. F. C.	Thursday	May 11
Prinz Eitel Friedrich	H.-A.	Monday	May 15
Trent	R. M.	Tuesday	May 16
Almirante	U. F. C.	Thursday	May 18
Prinz Aug. Wilhelm*	H.-A.	Tuesday	May 23
Santa Marta	U. F. C.	Thursday	May 25
Prinz Sigismund	H.-A.	Monday	May 29
Oruba	R. M.	Tuesday	May 30

NEW ORLEANS TO COLON.

Parismina	U. F. C.	Wednesday	May 3
Abangarez	U. F. C.	Saturday	May 6
Heredia	U. F. C.	Wednesday	May 10
Atenas	U. F. C.	Saturday	May 13
Cartago	U. F. C.	Wednesday	May 17
Turrialba	U. F. C.	Saturday	May 20
Parismina	U. F. C.	Wednesday	May 24
Abangarez	U. F. C.	Saturday	May 27
Heredia	U. F. C.	Wednesday	May 31

COLON TO NEW ORLEANS.

Atenas	U. F. C.	Thursday	May 4
Cartago†	U. F. C.	Thursday	May 4
Turrialba	U. F. C.	Thursday	May 11
Parismina†	U. F. C.	Thursday	May 11
Abangarez	U. F. C.	Thursday	May 18
Heredia†	U. F. C.	Thursday	May 18
Atenas	U. F. C.	Thursday	May 25
Cartago†	U. F. C.	Thursday	May 25
Turrialba	U. F. C.	Thursday	June 1
Parismina	U. F. C.	Thursday	June 1

Hamburg-American steamers leave Colon for New York via Kingston and Santiago, Cuba at 10 a. m.

A local run from Colon to Bocas del Toro and Port Limon will be made on Wednesday May 17 and 31; June 14 and 28.

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships designated (†) for New Orleans via Port Limon and Puerto Barrios on Thursday at 4 p. m.; ships for New York via Kingston on Thursday at 11 a. m.; for Bocas del Toro on Monday at 6 p. m.

The Leyland line steamer *Jamaican* sails for New Orleans via Kingston, Jamaica on or about May 22.

(Part II of The Canal Record, May 3, 1911.)

STATEMENT OF CONSTRUCTION EXPENDITURES TO MARCH 31, 1911.

Table No. 1.

Includes administrative and general expenses, but does not include general items or expenditures for sanitation, hospitals, and civil government.

Items.	Third Quarter, Fiscal Year 1911.			To December 31, 1910.			Total To March 31, 1911		
	Quantities.	Amount.	Unit Cost.	Quantities.	Amount.	Unit Cost.	Quantities.	Amount.	Unit Cost.
Atlantic Division—	*Cubic Yards.*			*Cubic Yards.*			*Cubic Yards.*		
1 Dry excavation, prism	91,636	$63,733.93	$0.6955	1,476,821	$1,007,659.57	$0 6823	1,568,457	$1 071,393.50	$0.6831
2 Hydraulic excavation, prism	14,255	$3,640.16	$0.2554				14,255	$3,640.16	$0.2554
3 Dredging excavation, prism	1,367,235	$329,435.72	$0.2409	21,160,443	$4,969,618.41	$0.2349	22,527,678	$5,299,054.13	$0.2352
Gatun Spillway—									
4 Dry excavation				1,544,202	$1,096,180.59	$0.7099	1,544,202	$1,096,180.59	$0.7099
5 Preparing foundations	13,527	$30,636.09	$2.2648	19,497	34,530.86	1.7711	33,024	65,166.95	1.9733
6 Masonry	17,823	116,076.44	6.5127	113,269	947,422.96	8.3644	131,092	1,063,499.40	8.1126
7 Ironwork		8,445.69			890.29			9,335.98	
8 Back filling				8,937	1,508.28	.1688	8,937	1,508.28	.1688
Total		$155,158.22			$2,080,532.98			$2,235,691.20	
Gatun Dam—									
9 Dredging excavation				38,425	$20,041.19	$0.5216	38,425	$20,041.19	$0.5216
10 Dry filling	684,745	$277,681.69	$0.4055	6,128,105	2,470,610.09	.4032	6,812,850	2,748,291.78	.4034
11 Hydraulic filling	856,525	264,029.64	.3082	5,833,076	1,565,207.11	.2683	6,689,601	1,829,236.75	.2734
12 Paving				40,411	14,719.69	.3642	40,411	14,719.69	.3642
Total		$541,711.33			$4,070,578.08			$4,612,289.41	
Gatun Locks—									
13 Dry excavation	81,138	$60,542.21	$0.7461	4,474,257	$3,029,192.42	$0.6770	4,555,395	$3,089,734.63	$0.6783
14 Dredging excavation		70.11		488,533	89,406.16	.1830	488,533	89,476.27	
15 Preparing foundations, excavation	61,691	88,455.35	1.4338	82,138	192,284.84	2.3410	143,829	280,740.19	1.9519
16 Preparing foundations, filling		*1,625.90		40,117	16,859.24	.4203	40,117	15,233.34	.3797
17 Masonry	231,907	1,553,122.48	6.6972	1,002,523	7,420,622.49	7.4019	1,234,430	8,973,744.97	7.2695
18 Ironwork		221,345.75			553,871.09			775,216.84	
19 Back filling	148,257	96,597.97	.6515	198,318	156,611.29	.7897	346,575	253,209.26	.7306
Total		$2,018,507.97			$11,458,847.53			$13,477,355.50	
Gatun Mindi Levee—									
20 Dry fill				177,158	$68,985.15	$0.3894	177,158	$68,985.15	$0.3894
21 Hydraulic fill				20,398	3,483.32	.1708	20,398	3,483.32	.1708
Total					$72,468.47			$72,468.47	
22 Colon Breakwater	127,467	$236,796.24	$1.8577	106,526	$341,837.91	$3.2090	233,993	$578,634.15	$2.4729
Total construction cost, Atlantic Division		$3,348,983.54			$24,001,542.95			$27,350,526.52	
23 Plant and equipment to be absorbed in construction costs after March 31								$4,351,599.42	
Total expenditures Atlantic Division								$31,702,125.94	
Central Division—									
24 Dry excavation, prism	5,266,754	$2,997,780.39	$0.5692	67,792,855	$61,301,798.52	$0.9043	73,059,609	$64,299,578.91	$0.8801
25 Clearing Canal line, without excavation	(Acres) 112	4,181.58	37.3355	(Acres) 2,098	134,857.24	64.2789	(Acres) 2,210	139,038.82	62.9134
26 Dredging excavation					9,798.40			9,798.40	
27 Masonry	874	4,178.73	4.7811				874	4,178.73	4.7811
Total construction cost, Central Division		$3,006,140.70			$61,446,454.16			$64,452,594.86	
28 Plant and equipment to be absorbed in construction costs after March 31								1,328,618.96	
Total expenditures, Central Division								$65,781,213.82	
Pacific Division—									
29 Dry excavation, prism	43,105	$21,872.15	$0.5074	240,063	$213,621.08	$0.8899	283,168	$235,493.23	$0.8316
30 Dredging excavation, prism	1,314,480	$376,728.40	$0.2866	25,814,443	$6,403,461.74	$0.2481	27,128,923	$6,780,190.14	$0.2499
31 Hydraulic excavation, prism	91,957	$39,739.45	$0.4322				91,957	$39,739.45	$0.4322
Pedro Miguel Dam—									
32 Dry excavation				4,074	$6,167.28	$1.5138	4,074	$6,167.28	$1.5138
33 Dry filling				260,852	121,363.91	.4653	260,852	121,363.91	.4653
Total					$127,531.19			$127,531.19	
Pedro Miguel Locks—									
34 Dry excavation	11,887	$6,775.60	$0.5700	1,018,657	$987,900.41	$0.9698	1,030,544	$994,676.01	$0.9652
35 Preparing foundations	11,286	28,699.69	2.5429	101,816	295,150.65	2.8989	113,102	323,850.34	2.8633
36 Masonry	120,240	626,824.18	5.2131	478,803	2,585,867.86	5.4007	599,043	3,212,692.04	5.3630
37 Ironwork		80,051.81			410,332.52			490,384.33	
38 Back filling	158,568	54,870.90	.3460	30,087	22,315.70	.7417	188,655	77,186.60	.4091
Total		$797,222.18			$4,301,567.14			$5,098,789.32	
Miraflores Dams and Spillway—									
39 Dry filling	81,029	$37,943.11	$0.4683	609,863	$356,584.33	$0.5847	690,892	$394,527.44	$0.5710
40 Hydraulic filling		4,147.31			5,044.45			9,191.76	
41 Masonry, core wall					429.51			429.51	
42 Dry excavation				14,536	19,991.26	1.3753	14,536	19,991.26	1.3753
Total		$42,090.42			$382,049.55			$424,139.97	
Miraflores Locks—									
43 Dry excavation, diversions				5,885	$2,028.98	$0.3448	5,885	$2,028.98	$0.3448
44 Dry excavation, in locks	77141.	$66,030.14	$0.8560	1,350,135	1,422,428.48	1.0535	1,427,276	1,488,458.62	1.0429
45 Dredging excavation				309,647	142,379.66	.4598	309,647	142,379.66	.4598
46 Hydraulic excavation	176,578	80,351.10	.4550	156,125	114,947.92	.7363	332,703	195,299.02	.5870
47 Preparing foundations	57,278	63,958.46	1.1166	139,320	306,102.11	2.1971	196,598	370,060.57	1.8823
48 Masonry	76,087	368,520.96	4.8434	97,028	525,715.36	5.4182	173,115	894,236.32	5.1656
49 Ironwork		214,981.86			231,716.82			446,698.68	
50 Back filling	2,340	547.18	.2338	542,756	108,619.87	.2001	545,096	109,167.05	.2003
Total		$794,389.70			$2,853,939.20			$3,648,328.90	

*Indicates credit.

Table 1—(*Continued.*)

Items.	Third Quarter, Fiscal Year, 1911.			To December 31, 1910.			Total to March 31, 1911.		
	Quantities.	Amount.	Unit Cost.	Quantities.	Amount.	Unit Cost.	Quantities.	Amount.	Unit Cost.
La Boca Locks and Dams (abandoned)—									
51 Dry excavation				78,233	$158,343.29	$2.0240	78,233	$158,343.29	$2.0240
52 Construction, dam					315,350.07			315,350.07	
35 Construction, locks					159,306.40			159,306.40	
Total					$632,999.76			$632,999.76	
54 Naos Island breakwater		$11,223.80			$40,232.85			$51,456.65	
Total construction cost, Pacific Division		$2,083,266.10			$14,955,402.51			$17,038,668.61	
55 Plant and equipment to be absorbed in construction costs after March 31								2,901,166.92	
Total expenditures, Pacific Division								$19,939,835.53	
Total expenditures, constr. and engr'n'g.								$117,423,175.29	

Item 8—*Gatun Spillway Back filling.* Material obtained mainly from excavation in preparing foundations, expenses in connection therewith being charged to Item No. .5
Item 26—*Dredging excavation, prism.* Preliminary surveys.

Item 40—*Miraflores Dams and Spillway.* Hydraulic filling. Expenditures represent cost of pipe lines, flumes, etc., 496,421 cubic yards have been deposited in Dam from dredging excavation in lock chamber, total expenditures therefor being charged to excavation.

Items 51, 52, 53—*La Boca Locks and Dams.* These expenditures were incurred prior to adoption of Miraflores as site for the lower locks and dams at the Pacific entrance to the Canal.

Item 54—*Naos Island Breakwater.* Expenditures represent cost of trestling only. Filling is done by Central Division and the cost thereof charged to Item No. 24—Central Division dry excavation, prism.

Items 23, 28, and 55—*Plant.* The expenditures for plant and equipment are absorbed into construction costs on the basis of estimated total cost of plant, and the estimated quantities of work to be done. The amounts shown under these items represent the balances which are to be absorbed into construction costs after March 31.

General—When excavated material is used in filling, such as dams, back filling, etc., the cost of dumping only is charged to the items benefited.

DAM CONSTRUCTION.

Table No. 2.

Detailed cost per cubic yard for quarter ending March 31, 1911:

Items.	Gatun Dam.				Miraflores Dam.			
	Jan.	Feb.	March	Total.	Jan.	Feb.	March	Total.
Dry Fill—Quantities—cubic yards	218,690	211,088	255,047	684,745	24,685	32,404	23,940	81,029
Excavation	$0 0148	$0.0066	$0.0118	$0.0112				
Clearing site	.0014	.0006	*.0004	.0005				
Tracks	.0545	.0481	.0395	.0469	$0.0674	$0.0113	$0.0553	$0.0414
Trestle	.0307	*.0003	.0063	.0120				
Transportation	.0218	.1270	.0854	.0779	.0844	.0453	.0829	.0684
Filling	.0815	.0834	.0678	.0770	.0978	.0639	.1185	.0903
Maintenance of equipment	.0382	.0512	.0493	.0464	.0641	.0368	.0619	.0525
Plant arbitrary	.0932	.1001	.0986	.0973	.1700	.1700	.1700	.1700
Division expense	.0139	.0090	.0086	.0104	.0196	.0094	.0171	.0148
Total division cost	$0.3500	$0.4257	$0.3669	$0.3796	$0.5033	$0.3367	$0.5057	$0.4374
Administrative and general expenses	0.307	.0255	.0221	.0259	.0382	.0183	.0404	.0309
Total cost	$.30807	$0.4512	$0.3890	$0.4055	$0.5415	$0.3550	$0.5461	$0.4683
Hydraulic Fill—Quantities—cubic yards	211,992	301,733	342,800	856,525				
Clearing site	$0.0014	$0.0006	*$.0004	$0.0004				
Clearing for dredge	.0092	.0211	.0213	.0183				
Dredging	.0936	.0761	.0644	.0758				
Relay pumps	.0114	.0095	.0120	.0110				
Pipe lines	.0836	.0146	.0226	.0349				
Wood flumes	.0268		.0036	.0081				
Power	.0303	.0450	.0421	.0402				
Small boats	.0021	.0017	.0017	.0018				
Maintenance of equipment	.0458	.0324	.0441	.0404				
Plant arbitrary	.0500	.0500	.0499	.0500				
Division expense	.0074	.0042	.0051	.0054				
Total division cost	$0.3616	$0.2552	$0.2664	$0.2863				
Administrative and general expenses	.0335	.0203	.0162	.0219				
Total cost	$0.3951	$0.2755	$0.2826	$0.3082				

Items.	Colon Breakwater.			
	Jan.	Feb.	March	Total.
Excavation—Quantities—Cubic yards	46,849	35,135	45,483	127,467
Surveys	$0.0057	$0.0386	$0.0135	$0.0175
Clearing	.0359	.0429	.0090	.0282
Drilling	.0564	.0533	.0470	.0522
Blasting	.1262	.1881	.3173	.2114
Loading by power	.0985	.1440	.0844	.1060
Tracks	.0318	.0556	.0788	.0551
Transportation	.0675	.1147	.0864	.0873
Maintenance of equipment	.0146	.0707	.1531	.0795
Total	$0.4366	$0.7079	$0.7895	$0.6372

Items.	Colon Breakwater—*Cont'd.*			
	Jan.	Feb.	March	Total.
Filing—Quantities—Cubic yards	46,849	35,135	45,483	127,467
Trestles	$1.2586	$0.5661	$0.2991	$0.7253
Dumping	.0173	.0224	.0207	.0200
Maintenance of equipment	.0263	.1357	*.0925	.0141
Total	$1.3022	$0.7242	$0.2273	$0.7594
Plant arbitrary	$0.1690	$0.1690	$0.1690	$0.1690
Division expense	.0316	.0359	.0361	.0344
Tug service	.0658	.0484	.0480	.0547
Total division cost	$2.0052	$1.6854	$1.2699	$1.6547
Administrative and general expenses	.2570	.1953	.1534	.2030
Grand total	$2.2622	$1.8807	$1.4233	$1.8577

*Indicates credit.

LOCKS AND SPILLWAYS CONSTRUCTION.

Table No. 3.

Detailed cost per cubic yard for quarter ending March 31, 1911.

Items.	Gatun Spillway.				Gatun Locks.				Pedro Miguel Locks.				Miraflores Locks.			
	Jan.	Feb.	March	Total.	Jan.	Feb.	March	Total.	Jan.	Feb.	March	Total.	Jan.	Feb.	March	Total.
Dry excavation—Quantities—cubic yards	....	....	....	....	47,988	33,150	....	81,138	6,734	5,153	....	11,887	13,762	....	63,379	77,141
Drilling	....	....	....	....	$0.0419	....	....	$0.0248	....	....	....	....	....	....	$0.1015	$0.0834
Blasting	....	....	....	....	.0407	$0.0039	....	.0256	....	....	....	....	....	....	.0339	.0290
Loading by power	....	....	....	....	.0942	.1073	....	.0995	$0.1121	$0.2813	....	$0.1855	$0.0728	....	.1778	.1546
Tracks	....	....	....	....	.0918	.0817	....	.0878	.0221	.1674	....	.0851	.3764	....	.1925	.2871
Transportation	....	....	....	....	.1589	.1314	....	.1476	.0923	.0896	....	.0911	.0440	....	.0493	.0484
Dumps	....	....	....	....	....	....	....	....	.0202	....	....	.0114	....	....	....	....
Trestles	....	....	....	....	.0030	.0103	....	.0060	....	....	....	....	....	....	....	....
Pumps	....	....	....	....	.0410	.0583	....	.0481	.0253	.0258	....	.0256	.0168	....	....	.0030
Power	....	....	....	....	.0166	.0069	....	.0126	....	....	....	....	....	....	....	....
Maintenance of equipment	....	....	....	....	.0654	.1125	....	.0846	.0897	.0940	....	.0915	.0541	....	.0309	.0352
Plant arbitrary	....	....	....	....	.1190	.1190	....	.1190	.0026	.0019	....	.0023	.0900	....	.0900	.0900
Division expense	....	....	....	....	.0334	.0194	....	.0276	.0188	.0324	....	.0247	.0235	....	.0207	.0253
Total division cost	....	....	....	....	$0.7059	$0.6507	....	$0.6832	$0.3831	$0.6924	....	$0.5172	$0.6782	....	$0.6966	$0.7860
Admin. and general expense	....	....	....	....	.0667	.0572	....	.0629	.0389	.0710	....	.0528	.0653	....	.0584	.0700
Total cost	....	....	....	....	$0.7726	$0.7079	....	$0.7461	$0.4220	$0.7634	....	$0.5700	$0.7435	....	$0.7550	$0.8560
Preparing foundations, excavation—Quantities—cubic yards	5,636	6,881	1,010	13,527	12,265	10,480	38,946	61,691	8,956	1,656	674	11,286	34,982	12,936	9,360	57,278
Coffer Dams	....	$0.3848	$0.9179	$0.2643	....	....	....	....	....	....	....	....	....	....	....	....
Drilling	$0.1199	.0575	....	.0792	$0.2317	$0.4237	$0.0924	$0.1764	$0.3159	$0.6317	$1.9193	$0.4580	$0.1577	$0.5742	$0.1595	$0.2521
Blasting	.0632	.0462	....	.0498	.1186	.2180	.0625	.1000	.1172	.3351	.4594	.1696	.0609	.1313	.0852	.0808
Loading by power	.0616	.1479	*.1995	.0860	.0776	.1630	.1039	.1087	.2369	....	....	.1880	.0789	.1723	.1147	.1059
Loading by hand	.5274	.6129	2 0237	.6826	.3463	.2637	.1970	.2380	.6465	1.0625	2.2616	.8040	.1414	.2926	.5260	.2384
Transportation	.2712	.3210	.2085	.2918	.0945	.0246	.1966	.1505	.1087	.2006	.5396	.1479	.0444	.0861	.0457	.0540
Tracks	.2914	.0865	....	.1654	....	.1901	.0500	.0605	.0579	.0562	.1535	.0633	.0472	.1407	.0345	.0662
Dumps	....	....	....	....	....	....	....	....	.0278	.2581	....	.0599	....	....	....	....
Pumps	.0196	.0445	....	.0308	.1605	.1849	.0811	.1145	.0253	.0258	.0176	.0249	.0168	.0186	.0129	.0165
Maintenance of equipment	.1751	.1920	.0694	.1758	.1445	.1880	.2003	.1872	.1549	.2900	.5849	.2004	.0602	.0838	.0500	.0639
Plant arbitrary	.1190	.1190	.1190	.1190	.1190	.1190	.1190	.1190	.0026	.0019	.0015	.0024	.0900	.0900	.0900	.0900
Division expense	.1068	.0858	.0809	.0942	.0788	.0788	0350	.0511	.1210	.1991	.3049	.1435	.0356	.0722	.0636	.0484
Total division cost	$1.7552	$2.0981	$3.2199	$2.0389	$1.3715	$1.8538	$1.1378	$1.3059	$1,8147	$3 0610	$6.2423	$2.2619	$0.7331	$1.6618	$1.1821	$1.0162
Admin. and general expense	.2115	.2405	.2057	.2259	.1583	.2287	.0913	.1279	.2272	.3914	.7235	.2810	.0705	.1465	.1485	.1004
Total cost	$1.9667	$2.3386	$3.4256	$2.2648	$1.5298	$2.0825	$1.2291	$1.4338	$2.0419	$3.4524	$6.9658	$2.5429	$0.8036	$1.8083	$1.3306	$1.1166
Masonry.																
Concrete—Quantities—cubic yards	2,510	6,609	8,704	17,823	67,257	66,014	79,609	212,872	38,400	36,985	44,716	120,101	23,436	20,399	30,930	74,765
Cement	$1.7053	$1.7972	$1.7660	$1.7691	$1.8413	$1.7225	$1.7265	$1.7616	$1.7444	$1.3688	$1.6378	$1.5890	$1.4801	$1.3070	$1.4166	$1.4066
Stone	1.6256	1.6778	1.6079	1.6363	2.0301	1.9779	1.8867	1.9603	.8463	.8835	.8463	.8578	.8463	.8835	.8463	.8564
Sand	.3805	.7679	.6689	.6650	.8421	.9083	.8126	.8516	.3901	.4042	.4089	.4014	.3901	.4042	.4089	.4017
Mixing	.3102	.1679	.1764	.1921	.1608	.1574	.1432	.1531	.1527	.2202	.1814	.1842	.5410	.5924	.5248	.5483
Total cost	$4.0216	$4.4108	$4.2192	$4.2625	$4.8743	$4.7661	$4.5690	$4.7266	$3.1335	$2.8767	$3.0744	$3.0324	$3.2575	$3.1871	$3.1966	$3.2130
Large Rock—Quantities—cubic yards	....	....	....	....	4,972	5,051	5,698	15,721	113	26	....	139	582	497	243	1,322
Cost	....	....	....	....	$1.2373	$1.0684	$1.3516	$1.2244	$0.7828	$0.2484	....	$0.6829	$0.5629	$0.3570	$0.5957	$0.4915
Masonry—Quantities—cubic yards	2,510	6,609	8,704	17,823	72,229	71,065	85,299	228,593	38,513	37,011	44,716	120,240	24,018	20,896	31,173	76,087
Concrete	$4.0216	$4.4108	$4.2192	$4.2625	$4.5388	$4.4274	$4.2638	$4.4015	$3.1243	$2.8747	$3.0744	$3.0289	$3.1785	$3.1113	$3.1717	$3.1573
Large rock	....	.0142	....	.0053	.0852	.0759	.0903	.0842	.0023	.0002	....	.0008	.0137	.0085	.0046	.0085
Wood forms	1.8870	.6734	.3315	.6774	.4694	.3611	.3218	.3807	.4307	.5535	.3906	.4536	.3364	.3993	.3299	.3510
Steel forms	....	....	....	....	.1070	.0709	.1077	.0960	.0527	.0274	.0163	.0314	.1120	.0552	.0342	.0645
Placing	1.2746	.4204	.5358	.5971	.3317	.3297	.2720	.3088	.3340	.3708	.3057	.3348	.2647	.2883	.1871	.2394
Coffer Dams	.8557	*.3924	.0355	.0077	....	....	....	....	....	....	....	....	....	....	....	....
Reinforcements	....	....	....	....	.0301	.0098	.0030	.0137	.0319	.0279	.0439	.0351	.0154	.0107	.0116	.0126
Pumps	.0147	.0154	....	.0078	.0290	.0292	.0353	.0314	.0252	.0258	.0176	.0226	.0164	.0181	.0128	.0154
Power	....	....	....	....	.0750	.0690	.0539	.0653	.0406	.0353	.0381	.0380	.0132	.0129	.0069	.0105
Maintenance of equipment	.3812	.1129	.2036	.1950	.2667	.2227	.2349	.2412	.1739	.1679	.1591	.1665	.1987	.1572	.1746	.1774
Plant arbitrary	.4670	.4670	.4670	.4670	.7110	.7110	.7110	.7110	.7173	.7131	.7155	.7154	.4100	.4100	.4100	.4100
Division expense	.2416	.0527	.0461	.0761	.0822	.0571	.0563	.0647	.0960	.0928	.0739	.0868	.1108	.1020	.0796	.0956
Total division cost	$9.1434	$5.7744	$5.8387	$6.2805	$6.7261	$6.3638	$6.1500	$6.3985	$5.0289	$4.8894	$4.8351	$4.9139	$4.6698	$4.5735	$4.4230	$4.5422
Admin. and general expense	.6739	.1780	.1461	.2322	.2193	.1863	.1650	.1888	.3392	.2702	.2887	.2992	.3422	.2795	.2841	.3012
Total cost	$9.8173	$5.9524	$5.9848	$6.5127	$6.9454	$6.5501	$6.3150	$6.5873	$5.3681	$5.1596	$5.1238	$5.2131	$5.0120	$4.8530	$4.7071	$4.8434
Masonry, reinforced—Quantities—Cubic yards	....	....	....	....	690	1,039	1,585	3,314	....	....	....	....	....	....	....	....
Cement	....	....	....	....	$3.5360	$2.1815	$2.0257	$2.3890	....	....	....	....	....	....	....	....
Stone	....	....	....	....	1.9359	1.6217	1.4673	1.6133	....	....	....	....	....	....	....	....
Sand	....	....	....	....	.8415	.7426	.6347	.7116	....	....	....	....	....	....	....	....
Forms	....	....	....	....	2.0287	2.7117	3.8084	3.0940	....	....	....	....	....	....	....	....
Mixing	....	....	....	....	1.4132	.9920	1.3906	1.2703	....	....	....	....	....	....	....	....
Placing	....	....	....	....	2.7430	1.1625	1.3717	1.5916	....	....	....	....	....	....	....	....
Reinforcements	....	....	....	....	1.9413	1.2357	.8323	1.1897	....	....	....	....	....	....	....	....
Maintenance of equipment	....	....	....	....	.3613	.2482	.0633	.1833	....	....	....	....	....	....	....	....
Plant arbitrary	....	....	....	....	.7110	.7110	.7110	.7110	....	....	....	....	....	....	....	....
Division expense	....	....	....	....	.4886	.2418	.3639	.3517	....	....	....	....	....	....	....	....
Total division cost	....	....	....	......$	16.0005	11.8487	12.6689	13.1055	....	....	....	....	....	....	....	....
Admin. and general expense	....	....	....	....	1.2949	.9904	1.2345	1.1705	....	....	....	....	....	....	....	....
Total cost	....	....	....	......$	17.2954	12.8391	13.9034	14.2760	....	....	....	....	....	....	....	....
Total masonry—Quantities—Cubic yards	2,510	6,609	8,704	17,823	72,919	72,104	86,884	231,907	38,513	37,011	44,716	120,240	24,018	20,896	31,173	76,087
Total cost	$9.8173	$5.9524	$5.9848	$6.5127	$7.0434	$6.6408	$6.4535	$6.6972	$5.3681	$5.1596	$5.1238	$5.2131	$5.0120	$4.8530	$4.7071	$4.8434

*Indicates credit.

Table No. 3—(*Continued.*)

Items.	Gatun Spillway.				Gatun Locks.				Pedro Miguel Locks.				Miraflores Locks.			
	Jan.	Feb	March.	Total.	Jan.	Feb.	March.	Total.	Jan.	Feb.	March.	Total.	Jan.	Feb.	March.	Toal.
Back filling—Quantities—cubic yards					66,589	41,153	40,515	148,257	31,072	31,399	96,097	158,568	1,060	1,280		2,340
Loading by power					$0.0350	$0.0593	$0.0664	$0.0503		$0.0876		$0.0173				
Transportation					.0589	.1272	.1000	.0891	$0.0495	.0449	$0.0206	.0310	*	$0.0708		$0.0387
Tracks					.1165	.1822	.3107	.1878	.1009	.0302	.0260	.0415				
Filling					.0796	.1162	.1216	.1013	.0835	.0722	.1099	.0973		.1050		.0574
Maintenance of equipment					.0283	.0412	.0363	.0340	.0335	.0508	.0160	.0263		.0285		.0156
Plant arbitrary					.1190	.1190	.1190	.1190	.1000	.1000	.1000	.1000	$0.1000	.1000		.1000
Division expense					.0205	.0229	.0154	.0198	.0189	.0178	.0055	.0106		.0137		.0075
Total division cost					$0.4578	$0.6680	$0.7694	$0.6013	$0.3863	$0.4035	$0.2780	$0.3240	$0.1000	$0.3180		$0.2192
Admin. and general expense					.0436	.0691	.0420	.0502	.0358	.0351	.0132	.0220		.0267		.0146
Total cost					$0.5014	$0.7371	$0.8114	$0.6515	$0.4221	$0.4386	$0.2912	$0.3460	$0.1000	$0.3447		$0.2338
Hydraulic excavation—Quantities—Cubic yards													89,243	87,335		176,578
Pumping station													$0.0620	$0.0791		$0.0704
Pipe lines													.0424	.0387		.0406
Dredging pumps													.0471	.0538		.0504
Relay pumps													.0008	.0001		.0005
Dykes														.0587		.0290
Monitors																
Maintenance of equipment													.0298	.0287		.0292
Power													.1278	.1408		.1342
Plant arbitrary													.0596	.0601		.0599
Division expense													.0116	.0124		.0120
Total division cost													$0.3811	$0.4724		$0.4702
Admin. and general expenses													.0268	.0309		.0288
Total cost													$0.4079	$0.5033		$0.4550

*Cost of dumping, etc., has been charged to "berm crane tracks ballast" so that the only charge to back filling is for plant arbitrary.

DRY EXCAVATION—PRISM.

Table No. 4.

Detailed cost per cubic yard for quarter ending March 31, 1911.

Items.	Atlantic Division.				Central Division.				Pacific Division.			
	Jan.	Feb.	Mar.	Total.	Jan.	Feb.	Mar.	Total.	Jan.	Feb.	Mar.	Total.
Dry Excavation—Quantities—cubic yard		41.902	49,734	91,636	1,594.955	1,621,392	2,000,631	5,216.978		15,271	27,834	43,105
Drilling		$0.0123	$0.0304	$0.0222	$0.0476	$0 0474	$0.0408	$0.0449				
Blasting		.0096	.0209	.0158	.0552	.0472	.0501	.0507				
Loading by power		.0604	.0745	.0706	.0480	.0461	.0411	.0448		$0.1265	$0.2005	$0.1744
Tracks		.0873	.1633	.1290	.1205	.0825	.0702	.0894		.1102	.0136	.0600
Transportation		.0608	.1103	.0876	.0754	.0701	.0566	.0666		.0746	.0520	.0478
Dumps					.0434	.0408	.0351	.0394			.0097	.0063
Pumps		.0335	.0349	.0876	.0062	.0055	.0052	.0056		.0186	.0139	.0155
Maintenance of equipment		.0644	.0879	.0965	.0882	.0837	.0690	.0794		.0733	.0403	.0520
Plant arbitrary		.1190	.1190	.1190	.1000	.1000	.1000	.1000		.1000	.1003	.1002
Division expense		.0118	.0157	.0162	.0119	.0121	.0105	.0114		.0209	.0129	.0157
Total division cost		$0.4591	$0.6569	$0.6445	$0.5964	$0.5354	$0.4786	$0.5322		$0.5241	$0.4432	$0.4719
Administrative and general expense		.0372	.0464	.0510	.0412	.0441	.0341	.0394		.0429	.0315	.0355
Total cost		$0.4963	$0.7033	$0.6955	$0.6376	$0.5795	$0.5127	$0.5716		$0.5670	$0.4747	$0.5074
Dry excavation—Prism, by contract—Quantities—cubic yards					16,824	7,496	25,456	49,776				
Contract cost					$0.2118	$0.2121	$0.2127	$0.2123				
Plant arbitrary					.1000	.1000	.1000	.1000				
Total cost					$0 3118	$0.3121	$0.3127	$0.3123				
Total dry excavation, quantities, cubic yards		41,902	49,734	91,636	1,611,779	1,628.888	2,026,087	5.266.754		15,271	27,834	43,105
Unit cost		$0.4963	$0.7033	$0.6955	$0 6342	$0.5783	0.5102	$0.5692		$0.5670	0.4747	$0.5074

DREDGING EXCAVATION—PRISM.

Table No. 5.

Detailed cost per cubic yard for quarter ending March 31, 1911.

Items.	Atlantic Division.								Pacific Division.							
	January.		February.		March.		Total.		January.		February.		March.		Total.	
	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.
Pipe lines	129,883	$0.0006	179,205	$0.0050	114,339	$0.0088	423,427	$0.0047	......	......	......	......	......	......	......	......
Dikes	129,883	.0804	175,205	.0287	114,339	.0610	423,427	.0533	......	......	......	......	......	......	......	......
Clearing	520,181	.0014	455,318	.0020	391,736	.0031	1,367,235	.0021	379,810	......	386,866	......	547,804	......	1,314,480	......
Op'n seagoing suction dredge	239,360	.0393	183,400	.0357	140,800	.0658	563,560	.0447	252,844	$0.0450	233,606	$0.0480	233,760	$0.0428	720,210	$0.0453
R'p'rs seagoing suction dredge	239,360	.0048	183,400	.0350	140,800	.1032	563,560	.0164	252,844	.0059	233,606	.0121	233,760	.0292	720,210	.0155
Operation ladder dredges	73,427	.1190	57,141	.1340	102,382	.1128	232,950	.1200	70,002	.0730	102,533	.0725	235,733	.0395	408,268	.0535
Repairs ladder dredges	73,427	.0425	57,141	.0254	102,382	.0539	232,950	.0433	70,002	.1930	102,533	.0289	235,733	.0185	408,268	.0505
Operation dipper dredges	77,511	.0754	35,572	.1438	34,215	.1518	147,298	.1096	56,964	.0636	50,727	.0954	78,311	.0719	186,002	.0758
Repairs dipper dredges	77,511	.0201	35,572	.5459	34,215	.0778	147,298	.1031	56,964	.0818	50,727	.0353	78,311	.0393	186,002	.0523
Operation pipe line dredges	129,883	.0732	179,205	.0864	114,339	.0921	423,427	.0839	......	......	......	......	......	......	......	......
Repairs pipe line dredges	129,883	.0049	179,205	.0255	114,339	.0428	423,427	.0023	......	......	......	......	......	......	......	......
Op'n tugs, clapets and scows	150,938	.0718	92,713	.0916	136,597	.0673	380,248	.0750	126,966	.0538	153,260	.0668	314,044	.0560	594,270	.0583
R'p's tugs, clapets and scows	150,938	.0369	92,713	.0913	136,597	.0656	380,248	.0604	125,966	.0419	153,260	.0344	314,044	.0238	594,270	.0304
Drilling	43,865	.0215	39,232	.0214	50,105	.0297	133,202	.0246	31,443	.0679	24,347	.0748	26,591	.0668	82,381	.0696
Blasting	43,865	.0625	39,232	.0915	50,105	.0572	133,202	.0690	31,443	.0985	24,347	.1180	26,591	.3261	82,381	.1778
Operation drill barges	......	......	......	......	......	......	......	......	31,443	.1208	24,347	.1290	26,591	.1791	82,381	.1420
Operation rock breakers	......	......	......	......	......	......	......	......	31,443	.0683	24,347	.0927	26 591	.0713	82,381	.0765
Small boats	520,181	.0019	455,318	.0017	391,736	.0042	1,367,235	.0025	379,810	.0036	386,866	.0031	547,804	.0026	1,314,480	.0030
Repairs misc. equipment	520,181	.0005	455,318	.0032	391,736	.0019	1,367,235	.0003	379,810	.0189	386,866	.0271	547,804	.0056	1,314,480	.0157
Plant arbitrary	520,181	.0610	455,318	.0610	391,736	.0610	1,367,235	.0610	379,810	.0900	386,866	.0900	547,804	.0854	1,314,480	.0881
Division expense	520,181	.0063	455,318	.0058	391,736	.0088	1,367,235	.0068	379,810	.0059	386,866	.0058	547,804	.0048	1,814,480	.0054
Total division cost	520,181	$0.2067	455,318	$0.1404	391,736	$0.3205	1,367,235	$0.2172	379,810	$0.2845	386,866	$0.2725	547,804	$0.2469	1,314,480	$0.2653
Admin. and general expense	520,181	$ .0186	455,318	$.0225	391,736	$.0320	1,367,235	$.0237	379,810	$0.0249	386,866	$0.0256	547,804	$0.0157	1,314,480	$0.0213
Total cost	520,181	$0.2253	455,318	$0.1629	391,736	$035.25	1,367,235	$0.2409	379,810	$0.3094	386,866	$0.2981	547,804	$0.2626	1,314,480	$0..866
Earth excavation—per cent	476,316	91.57	416,086	91.38	341,631	87.21	1,234,033	90.26	348,367	91.72	362,519	93.71	521,213	95.15	1,232,099	93.73
Rock excavation—per cent	43,865	8.43	39,232	8.62	50,105	12.79	133,202	09.74	31,443	08.28	34,347	06.29	26,591	04.85	82,381	06.27

STONE PRODUCTION.

Table No. 6.

Detailed cost per cubic yard for quarter ending Maach 31, 1911.

	Porto Bello Quarry.				Ancon Quarry.			
	January.	February.	March.	Total.	January.	February.	March.	Total.
Quarrying—Quantities—cubic yards	84,072	72,242	87.109	243,423	73,329	68,293	77,921	*229,543
Stripping	$0.0036	$0.0078	$0.0072	$0.0062	$0.0660	$0.0883	$0.1078	$0.0839
Drilling	.0381	.0405	.0315	.0364	.0510	.0444	.0488	.0461
Blasting	.1690	.1499	.1437	.1543	.0473	.0764	.0378	.0507
Loading	.0867	.0845	.0683	.0794	.0504	.0449	.0961	.0621
Transportation	.0682	.0720	.0572	.0654	.0872	.0909	.0887	.0850
Tracks	.0382	.0383	.0272	.0343	.0274	.0263	.0235	.0245
Power	.0360	.0190	.0191	.0249	......	......	......	......
Maintenance of equipment	.0735	.0861	.0540	.0703	.0603	.0745	.0112	.0452
Plant arbitrary	.3300	.3300	.3300	.3300	.2400	.2400	.2400	.2400
Total	$0.8433	$0.8281	$0.7382	$0.8012	$0.6296	$0.6857	$0.6539	$0·6375
Crushing—Quantities—cubic yards	84,072	72,242	87,109	243,423	73,329	68,293	77,921	229,543
Operation, crushers	$0.0222	$0.0259	$0.0224	$0.0234	$0.0244	$0.0185	$0.0196	$0.0200
Stone bins and conveyors	.0274	.0244	.0384	.0305	.0052	.0051	.0055	.0050
Power	.0389	.0417	.0410	.0105	.0180	.0161	.0166	.0161
Maintenance of equipment	.1038	.1032	.1397	.1164	.0365	.0076	.0190	.0204
Plant arbitrary	.1700	.1700	.1700	.1700	.0754	.0746	.0745	.0748
Total	$0.3623	$0.3652	$0.4115	$0.3808	$0.1595	$0.1219	$0.1352	$0.1363
Total cost of production	$1.2056	$1.1933	$1.1497	$1.1820	$0.7891	$0.8076	$0.7891	$0.7738
Towing—Quantities—cubic yards	84,072	72,242	87,109	243,423	......	......	......	......
Operation tugs and barges	$0.1920	$0.1553	$0.1572	$0.1686	......	......	......	......
Maintenance of equipment	.2218	.1376	.0881	.1490	......	......	......	......
Plaot arbitrary	.1710	.1710	.1710	.1710	......	......	......	......
Total	$0.5848	$0.4639	$0.4163	$0.4886	......	......	......	......
Unlaading—Quantities—cubic yards	84,072	72,242	87,109	243,423	......	......	......	......
Operation, cableways and cranes	$0.1274	$0.1286	$0.0953	$0.1162	......	......	......	......
Power	.0216	.0219	.0157	.0196	......	......	......	......
Track repairs	......	......	......	......	......	......	......	......
Dumping	......	......	......	......	......	......	......	......
Maintenance of equipment	.1446	.1054	.0275	.0911	......	......	......	......
Plant arbitrary	.2070	.2070	.2070	.2070	......	......	......	......
Total	$0.5006	$0.4629	$0.3455	$0.4339	......	......	......	......
Rail Transportation to Storage—Quantities—cubic yards	27,392	19,702	23,248	70,342	73,329	68,293	77,921	229,543
Operation of trains	$0.0650	$0.0880	$0.0590	$0.0695	$0.0531	$0.0522	$0.0381	$0.0454
Repairs to tracks	.0221	.0169	.0110	.0170	.0151	......	......	.0048
Dumping in storage	......	......	......	......	.0133	.0181	.0095	.0129
Maintenance of equipment	.0570	.0903	.0766	.0728	.0162	.0210	.0260	.0203
Plant arbitrary	......	......	......	......	.0600	.0600	.0600	.0600
Total	$0.1441	$0.1952	$0.1466	$0.1593	$0.1577	$0.1513	$0.1336	$0.1434
Division expense	$0.0312	$0.0240	$0.0287	$0.0202	$0.0317	$0.0291	$0.0259	$0.0276
Total cost in storage	$2.3693	$2.1971	$1.9793	$2.1787	$0.9785	$0.9880	$0.9486	$0.9448

*Note—Under "Total Quantities" 10,000 cubic yards have been added to adjust difference between cross section measurement and book balances. This amount was not added to moathly quaotities.

SAND PRODUCTION.

Table No. 7.

Detailed cost per cubic yard for quarter ending March 31, 1911.

Items.	Nombre de Dios.				Chamé.			
	January.	February.	March.	Total.	January.	February.	March.	Total.
Dredging—Quantities—cubic yards	28,994	33,412	47,885	110,291	41,130	36,272	41,878	119,280
Operation, dredges	$0.2820	$0.2687	$0.1948	$0.2401	$0.0973	$0.0947	$0.1262	$0.1066
Maintenance of equipment	.0545	.0235	.0278	.0335	.0434	.0270	.0321	.0345
Total	$0.3365	$0.2922	$0.2226	$0.2736	$0.1407	$0.1217	$0.1583	$0.1411
Plant arbitrary	$0.4800	$0.04800	$0.4800	$0.4800	$0.0300	$0.0300	$0.0300	$0.0300
Total cost of production	*$0.8228	*$0.8214	*$0.7183	*$0.7770	$0.1707	$0.1517	$0.1883	$0.1711
Towing—Quantities—cubic yards	28,994	33,412	47,885	110,291	41,130	36,272	41,878	119,280
Operation, tugs and barges	$0.2439	$0.2540	$0.1747	$0.2169	$0.1237	$0.1348	$0.0865	$0.1141
Maintenance of equipment	.1986	.1561	.1146	.1493	.0278	.1015	.0609	.0618
Plant arbitrary	.2110	.2110	.2110	.2110	.0700	.0700	.0700	.0700
Total	$0.6535	$0.6211	$0.5003	$0.5772	$0.2215	$0.3063	$0.2174	$0.2459
Unloading—Quantities—cubic yards	28,994	33,412	47,885	110,291	41,130	36,272	41,878	119,280
Operation, cableways and cranes	$0.1226	$0.1338	$0.0965	$0.1146	$0.0591	$0.0702	$0.0605	$0.0630
Power	.0171	.0154	.0345	.0151	.0325	.0329	.0310	.0321
Maintenance of equipment	.1224	.1211	.0138	.0839	.0823	.0671	.0905	.0806
Plant arbitrary	.1620	.1620	.1620	.1620	.1048	.1046	.1043	.1045
Total	$0.4241	$0.4323	$0.3068	$0.3756	$0.2787	$0.2748	$0.2863	$0.2802
Rail Transportation to Storage—Quantities—cubic yards	10,769	14,656	16,509	41,934	41,130	36,257	41,848	119,235
Operation of trains	$0.0650	$0.0879	$0.0591	$0.0707	$0.0448	$0.0493	$0.0469	$0.0469
Repairs to tracks	.0221	.0170	.0110	.0159	.0336	.0167	.0234	.0249
Dumping in storage	....	....	....	....	.0118	.0225	.0095	.0143
Maintenance of equipment	.0570	.0903	.0765	.0763	.0138	.0200	.0319	.0220
Plant arbitrary	....	....	....	....	.0800	.0800	.0800	.0800
Total	$0.1441	$0.1952	$0.1466	$0.1629	$0.1840	$0.1885	$0.1917	$0.1881
Division expense	$0.0145	$0.0103	$0.0068	$0.0099	$0.0273	$0.0153	$0.0126	$0.0185
Total cost in storage	$1.9683	$1.9707	$1.5827	$1.8017	$0.8822	$0.9366	$0.8963	$0.9038

*Dry excavation in January February and March is charged with $182.11, $1,643.68, and $754.25, respectively, under maintenance, but no yardage was accomplished. The total cost of production includes this amount and for this reason the cost of dredging plus plant charge does not equal total cost of production.

HYDRAULIC EXCAVATION—PRISM.

Table No. 8.

Items.	Atlantic Division.				Pacific Division.			
	January.	February.	March.	Total.	January.	February.	March.	Total.
Quantities—cubic yards	....	5,200	9,055	14,255	....	....	91,957	91,957
Pumping station	....	....	....	....	....	....	$0.0763	$0.0763
Pipe lines	....	....	....	....	....	....	.0312	.0312
Dredging pumps	....	$0.1081	$0.0623	$0.0791	....	....	.0393	.0393
Relay pumps	....	....	....	....	....	....	....	....
Dykes	....	....	....	....	....	....	.0215	.0215
Monitors	....	....	....	....	....	....	....	....
Maintenance of equipment	....	....	....	....	....	....	.0436	.0436
Power	....	....	....	....	....	....	.1243	.1243
Plant arbitrary	....	.1190	.1190	.1190	....	....	.0594	.0594
Division expense	....	.0118	.0157	0143	....	....	.0094	.0094
Total division cost	....	$0.2389	$0.1970	$0.2124	....	....	$0.4050	$0.4050
Administrative and general expenses	....	.0372	.0465	.0430	....	....	.0272	.0272
Total cost	....	$0.2761	$0.2435	$0.2554	....	....	$0.4322	$0.4322

LEASE OF LOTS IN COLON.

Sealed bids will be received up to 5.30 p. m., Wednesday, May 31, 1911 for lease to the highest bidder of lots in the newly filled section of Colon as shown on plans which may be seen at the Land Office in Colon and at the Land Office in Panama.

These sealed bids must be addressed to the General Superintendent of the Panama Railroad Company, Colon, and must be plainly marked on the outside of the envelope "Proposal for lot No. ——, block No. ——, Colon." Bids not marked in this manner will not be considered.

The minimum rental to be accepted for these lots may be ascertained by applying to either one of the above mentioned Land Offices.

Persons holding options on any lots in this district and having paid rental up to June 30, 1910, will have the privilege of taking the lot at the highest rate offered.

The lots to be leased are those on the west side of E street between 2d street and 14th street, and that district on the east side of E street bounded by 2d street on the north, 9th street on the south, E street on the west and G street on the east.

Those lots on the west side of E street will be available for building on or about June 1, 1911; the balance of the lots will not be available for building before October 1, 1911.

Parties submitting bids must state character and purpose of building they intend to erect, and must indicate period of time in which they expect to commence construction after assignment.

Application blanks may be obtained at the Land Office in Colon and Panama.

All rental is to be paid quarterly in advance.

The Panama Railroad Company reserves the right to reject any or all bids.

J. A. SMITH,
General Superintendent.

Colon, R. P., April 22, 1911.

COACH TARIFF.

Rates Established in the Canal Zone and Panama.

ANCON, C. Z., April 20, 1911.

By virtue of the authority conferred on me by an ordinance enacted by the Isthmian Canal Commission on August 25, 1910 and approved by the Secretary of War on December 3, 1910, I hereby establish and promulgate, to be effective on and after May 4, 1911, the rates and charges hereinafter set forth which may be made and collected by persons engaged in the transportation of passengers for hire over the streets and roads of the Canal Zone by means of carriages, surreys, wagons, carts, coaches, cabs, or other conveyances drawn by horses or mules.

Any person who shall charge and receive for the transportation of any person over the streets or roads of the Canal Zone in any of the aforesaid conveyances, any sum in excess of any rate herein prescribed, or any person who shall receive for himself or others such transportation in the Canal Zone, and who fails or refuses to pay therefor the rate or rates herein prescribed, shall be held to be guilty of a misdemeanor, and upon conviction, shall be fined for each offense a sum not exceeding Twenty-five Dollars (Sections 4 and 5 of Ordinances.) A rate different from that herein prescribed may, however, be charged and paid if the parties to the transaction agree thereon; but if there be any dispute as to such agreement the duly prescribed rate shall prevail (Section 4). Where the rates are indicated to cover transportation of persons betweeen Zone points and points in Panamanian territory, they are the same that have been duly established and promulgated by Panamanian authority for the like service; the rates to cover such transportation having been agreed on by such Panamaian authority and myself, thus providing harmony of coach tariffs: and, except under agreement otherwise, it shall be unlawful to charge and receive any rate not so prescribed, or to refuse to pay any rate so prescribed.

The failure of any coachman to keep a copy of this tariff displayed in his coach constitutes a violation of the aforesaid ordinance.

Except when duly licensed in the Republic of Panama, on each conveyance aforesaid employed in the transportation of passengers for hire, there shall be paid to the Canal Zone Government a license tax of $1.25 (United States Currency) a month (Par. "A," Section 7, of the "Regulations Providing for Certain Taxes and licenses in the Canal Zone other than for the Sale of Intoxicating Liquors," effective July 1, 1908, as amended by ordinance enacted August 25, 1910, and approved by the Acting Secretary of War, October 31, 1910.)

All coaches and like conveyances on Zone streets and roads should carry lights between the hours of 6 p. m and 5 a. m., and should also be provided with bells or horns.

Coachmen should secure copies of this tariff from the Head of the Department of Civil Administration, Ancon, Canal Zone.

(Note A.) The rates herein indicated are in Panamanian (silver) money. The rates in United States currency are one-half of those shown in this tariff.

(Note B.) The term "east of Episcopal chapel" means east of a north and south line drawn through the entrance to the chapel.

(Note C.) One stop, not exceeding five (5) minutes, in transit between two points will be allowed without the payment of extra fare.

(Note D.) Between 11 p. m. and 6 a. m. the rates are increased fifty (50) per cent.

(Note E.) In lieu of the rates herein named, special agreements as to rates may be made between passengers and coachmen.

ANCON AND CITY OF PANAMA

		One person.	Two persons.	Three persons.	Four persons.
Between the Episcopal chapel (hospital grounds) and any point in Panama, or any point in Ancon east of Episcopal chapel...	One way...	$0.20	$0.40	$0.60	$0.80
	Round trip	.40	.80	1.20	1.60
Between Hotel Tivoli or its environs and any point in Ancon east of Episcopal chapel....	One way...	.20	.40	.60	.80
	Round trip	.40	.80	.120	1.60
Between any point in Ancon on the Zone line road as far south as House No. 115, and any other point in Ancon east of Episcopal chapel, or any point in Panama....	One way...	.20	.40	.60	.80
	Round trip	.40	.80	1.20	1.60
Between kitchen building of Ancon Hospital and any point in the hospital grounds....	One way...	.20	.40	.60	.80
	Round trip	.40	.80	1.20	1.60
Between kitchen building of Ancon Hospital and any other point in Ancon east of Episcopal chapel, or any point in Panama...	One way...	.50	1.00	1.20	1.40
	Round trip	1.00	1.50	1.80	2.00
Between Administration building in Ancon and any point in Ancon north of postoffice or any point in Panama....	One way...	.40	.80	1.10	1.30
	Round trip	.80	1.20	1.50	1.70
Between the fire station in Ancon Hospital grounds and any point in Ancon east of Episcopal chapel....	One way...	.70	1.40	2.00	2.50
	Round trip	1.40	1.90	2.40	2.80
Between Ancon Hospital cemetery and any point in Ancon east of Episcopal chapel....	One way...	1.00	1.50	2.00	2.50
	Round trip	1.50	2.00	2.50	3.00
Between any points in Ancon embraced in the boundary enclosed by street running from Administration building to Roman Catholic chapel; thence to postoffice; thence southwesterly on Zone line road; thence to Administration building....	One way...	.20	.40	.60	.80
	Round trip	.40	.80	1.20	1.60
Between any point in Ancon east of Episcopal chapel, and any other point in Ancon or any point in Panama....	One way...	.20	.40	.60	.80
	Round trip	.40	.80	1.20	1.60
Between intersection of Bishop's Hollow and Ancon Hospital roads (east of new corral) and any point in Panama or Hotel Tivoli and its environs or any point in Ancon east of Episcopal chapel....	One way...	.40	.80	1.10	1.30
	Round trip	80	1.20	1.50	1.70
Between Ancon Insane Asylum (Bishop's Hollow road) and any point in Panama or Hotel Tivoli and its environs or any other point in Ancon east of Episcopal chapel....	One way...	.60	1.20	1.50	1.80
	Round trip	1.20	1.80	2.20	2.50
Between I. C. C. labor camps (Bishop's Hollow road) and any point in Panama or Hotel Tivoli and its environs, or any point in Ancon east of Episcopal chapel....	One way...	.70	1.40	2.00	2.50
	Round trip	1.40	1.90	2.40	2.80
Between any point in Ancon east of Episcopal chapel or any point in Panama, and the old ice factory (out Savannas road).	One way...	.40	.60	.80	1.00
	Round trip	.60	1.20	1.50	1.80
BALBOA.					
Between Balboa docks and East Balboa commissary....	One way...	.40	.80	1.10	1.30
	Round trip	.80	1.20	1.50	1.70
Between East Balboa commissary and East Balboa hotel....	One way...	.20	.40	.60	.80
	Round trip	.40	.80	1.20	1.60
Between East Balboa hotel and junction of Zone line road and Panama-Balboa road....	One way...	.20	.40	.60	.80
	Round trip	.40	.80	1.20	1.60
Between El Chorrillo (junction of Zone line road and Panama-Balboa road) and any point in the city of Panama, or the Hotel Tivoli and environs, or any other point in Ancon east of Episcopal chapel....	One way...	.40	80	.110	1.30
	Round trip	.80	1.20	1.50	1.70
Between Balboa docks and any point in Panama or the Hotel Tivoli and environs or any point east of Epsicopal chapel....	One way...	1.00	2.00	2.50	3.00
	Round trip	2.00	3.00	3.50	4.00
Between East Balboa commissary and any point in Panama or the Hotel Tivoli and environs or any point east of Episcopal chapel....	One way...	.70	1.40	2.00	2.50
	Round trip	1.40	1.90	2.40	2.80
SAVANNAS ROAD.					
Between the old rock quarry (near the boundary line between the Canal Zone and the city of Panama) and the Hotel Tivoli and environs, or any point in Ancon east of Episcopal chapel, or any point in Panama....	One way...	.60	1.20	1.50	1.80
	Round trip	1.20	1.80	2.20	2.50
Between Tumba Muerto road and any point in Ancon east of Episcopal chapel, or any point in Panama....	One way...	1.00	2.00	2.50	3.00
	Round trip	2.00	3.00	3.50	4.00
Between the Savannas Police Station and any point in Ancon or Panama....	One way...	1.50	3.00	4.00	4.50
	Round trip	3.00	4.00	4.50	5.00
Between Zone line beyond or east of Savannas Police Station and any point in Ancon or Panama....	One way...	2.00	3.50	4.50	5.50
	Round trip	3.50	5.00	6.00	6.50
Between Rio Abajo (beyond Zone boundary line) and any point in Ancon or Panama....	One way...	2.50	4.00	5.00	6.00
	Round trip	4.00	6.00	7.00	8.00
JUAN DIAZ.					
Between Juan Diaz River and any point in Ancon or Panama..	One way...	5.00	8.00	10.50	12.50
	Round trip	7.50	10.00	12.50	14.00
INTERIOR STREETS AND ROADS OF CANAL ZONE SOUTH OF GATUN LAKE.					
Between any point in Corozal and any point in Ancon or the city of Panama....	One way...	3.00	5.00	7.00	8.00
	Round trip	5.00	7.00	8.00	9.00
Between any two points in Corozal....	One way...	.20	.40	.60	.80
	Round trip	.40	.80	1.20	1.60
Between any point in Corozal and the Cardenas River....	One way...	1.20	2.00	3.00	3.50
	Round trip	2.00	3.00	3.50	4.00
Between any point in Corozal and any point in Miraflores....	One way...	3.00	5.00	7.00	8.00
	Round trip	5.00	7.00	8.00	9.00
Between any point in Miraflores and the Cardenas River....	One way...	1.80	3.00	4.00	4.50
	Round trip	3.00	4.00	4.50	5.00
Between any two points in Miraflores....	One way...	.20	.40	.60	.80
	Round trip	.40	.80	1.20	1.60
Between any point in Miraflores and any point in Pedro Miguel.	One way...	.50	1.00	1.40	1.70
	Round trip	1.00	1.50	2.00	2.50
Between any two points in Paraiso....	One way...	.20	.40	.60	.80
	Round trip	.40	.80	1.20	1.60
Between any point in Paraiso and any point in Pedro Miguel..	One way...	.30	.60	.90	1.20
	Round trip	.60	1.20	1.60	2.00
Between any point in Paraiso and any point in Empire....	One way...	3.00	5.00	7.00	8.00
	Round trip	5.00	7.00	8.00	9.00
Between any two points in Empire west of the Panama railroad.	One way...	.30	.60	.90	1.20
	Round trip	.60	1.00	1.30	1.60
Between any point in Empire west of Panama railroad and any point in Camacho (New Empire) or to the slaughter house..	One way...	.40	.80	1.10	1.30
	Round trip	.80	1.20	1.60	2.00
Between any point in Empire west of Panama railroad and any point in Golden Green....	One way...	.50	1.00	1.40	1.70
	Round trip	1.00	1.50	2.00	2.50
Between any point in Empire west of Panama railroad and Cerro....	One way...	.50	1.00	1.40	1.70
	Round trip	1.00	1.50	2.00	2.50
Between any point in Empire and Culebra railroad station....	One way...	1.00	1.50	2.00	2.50
	Round trip	1.50	2.00	2.50	3.00
Between any point in Empire and any point on Culebra hills above railroad station, including Rio Grande....	One way...	1.50	2.20	2.80	3.30
	Round trip	2.20	2.80	3.40	4.00

INTERIOR STREETS AND ROADS OF CANAL ZONE SOUTH OF GATUN LAKE.—*Continued.*

		One person.	Two persons.	Three persons.	Four persons.
Between Rio Grande and the white school building in Culebra.	One way...	$0.30	.60	.90	1.20
	Round trip	.60	1.20	1.60	2.00
Between Culebra railroad station and any point on Culebra hills, including Rio Grande..........	One way...	.50	1.00	1.40	1.70
	Round trip	1.00	1.50	2.00	2.50
Between any point in Empire west of Panama railroad, and any point in Empire east of railroad..........	One way...	.40	.80	1.10	1.30
	Round trip	.80	1.20	1.60	2.00
Between any point in Empire and Las Cascadas plantations...	One way...	4.00	6.00	7.50	8.50
	Round trip	6.00	7.50	9.00	10.00
Between any point in Empire and any point in Las Cascadas..	One way...	1.00	1.50	2.00	2.50
	Round trip	1.50	2.00	2.50	3.00
Between any point in Empire and any point in Paraiso.......	One way...	3.00	5.00	7.00	8.00
	Round trip	5.00	7.00	8.00	9.00
Between any point in Las Cascadas, and Bas Obispo railroad station..........	One way...	1.50	2.20	2.80	3.30
	Round trip	2.20	2.80	3.40	4.00
Between Bas Obispo railroad station, and Camp Elliott or any point on Bas Obispo hills..........	One way...	.30	.60	.90	1.20
	Round trip	.60	.100	1.30	1.60
Between any point in Bas Obispo and any point in Gorgona...	One way...	3.00	5.00	6.50	8.00
	Round trip	5.00	6.50	8.00	9.00
Between any point in Gorgona and slaughter house..........	One way...	.40	.80	1.10	1.30
	Round trip	.80	1.20	1.60	2.00
Between I. C. C. shops and any point in Gorgona, or between any point in Gorgona and Buzzard Hill, or Brooklyn.......	One way...	.30	.60	.90	1.20
	Round trip	.60	1.00	1.30	1.60
HOURLY RATES.					
Between 6 a. m. and 11 p. m., Coach per hour..........		2.00	2.50	3.00	3.50
Between 11 p. m. and 6 a. m., coach per hour..........		2.50	3.00	3.50	4.00
CRISTOBAL—MOUNT HOPE—COLON.					
Between any two points in Cristobal..........	One way...	.20	.40	.50	.60
	Round trip	.40	.70	.90	1.00
Between any point in Cristobal and any point in Colon, including Colon Hospital..........	One way...	.20	.40	.50	.60
	Round trip	.40	.70	.90	1.00
Between any point in Cristobal and any point in Colon beyond or east of Colon Hospital..........	One way...	.30	.60	.80	1 00
	Round trip	.60	1.00	1.30	1.50
Between I. C. C. corral and any point in Cristobal or any point in Colon south of 11th street..........	One way...	.30	.60	.80	1.00
	Round trip	.60	1.00	1.30	1.50
Between I. C. C. corral and any point in Colon north of 11th street and including Colon Hospital..........	One way...	.40	.80	1.00	1.20
	Round trip	.80	1.40	1.80	2.00
Between I. C. C. corral and any point in Colon beyond or east of Colon Hospital..........	One way...	.50	1.00	1.30	1.60
	Round trip	1.00	1.70	2.20	2.50
Between Mount Hope pumping station and I. C. C. corral.......	One way...	.20	.40	.50	.60
	Round trip	.40	.80	.90	1.00
Between Mount Hope pumping station and any point in Cristobal or in Colon south of 11th strret..........	One way...	.50	1.00	1.30	1.60
	Round trip	1.00	1.70	2.20	2.50
Between Mount Hope pumping station and any point in Colon north of 11th street, including Colon Hospital..........	One way...	.70	1.40	1.80	2.20
	Round trip	1.40	2.50	3.00	3.30
Between Mount Hope pumping station and any point in Colon beyond or east of Colon Hospital..........	One way...	.80	1.60	2.00	2.40
	Round trip	1.60	2.80	3.50	4.00
NOTE—For the purpose of this tariff the town of Cristobal shall be considered as including all Zone area north of the southern shore of Folks River.					
GATUN.					
Between any two points in Gatun, including the Panama railroad station on the south and the residence of the Division Engineer, the I. C. C. quarters, and labor barracks on the north..........	One way...	.30	.60	.80	1.00
	Round trip	.60	1.00	1.30	1.50
Between any two points in New Gatun..........	One way...	.20	.40	.50	.60
	Round trip	.40	.70	.90	1.00
Between any point in New Gatun and any point in Old Gatun.	One way...	.50	1.00	1.30	1.60
	Round trip	1.00	1.70	2.20	2.50
Between any point in Gatun and any point in Cristobal or Colon..........	One way...	5.00	8.00	10.50	12.50
	Round trip	7.50	10.00	12.50	14.00
Between any point in New Gatun and any point in Cristobal or Colon..........	One way...	4.50	7.00	9.00	10.50
	Round trip	6.50	8.50	10.50	11.50
RATES OF COACHES BY THE HOUR.					
One coach, per hour..........		1.50	2.00	2.50	3.00

M. H. THATCHER
Head of Department of Civil Administration.

SUPPLIES FOR CANAL WORK.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal, Colon and Balboa during the two weeks ending April 29, 1911:

Pennsylvania, April 18, from San Francisco, with 5 packages hydraulic machinery for Pacific Division.

Panama, April 18, from New York, with 1 drum on skids, 5 cases shafting, 3 crates pipe couplings, 10,090 pieces conduit pipe for Atlantic Division; 5 bundles castings, 3 crates pipe couplings, 10,090 pieces conduit pipe 8 cases pump material for Pacific Division; 16 pieces boom feet and sheaves for Central Division; 5 cases gear cutters, 64 casks copper ingots, 26 bundles insulated copper wire, 86 cases incandescent lamps for Mechanical Division; 53 cases machinery, 72 pieces machinery, 10 cases plates and lamps for Panama railroad; 50 packages drugs and sundries for Sanitary Department; 16 cases agate ware, 394 pieces garbage cans; 15 cases insulated tape, 32 pieces maple lumber, 15 cases rubber hose, 20 packages life preservers, 667 bundles shovels, 11 cases babbitt metal, 17 cases ink, 8 packages fittings for stock; and a miscellaneous cargo, the whole consisting of 21,867 packages, weighing 630 tons.

Waconsta, April 19, from New York, with 12,281 barrels cement for Atlantic Division; 60,560 bags cement for Pacific Division.

Abangarez, April 20, 1911, from New Orleans, with 21 packages earth spreader, 250 tons pig iron, 200 pieces castings for Mechanical Division; 630 bales straw, 120 sacks bran, 314 pieces lumber for stock.

Lyra, April 20, from Philadelphia, with 380 pieces angle reinforcements for Atlantic Division.

Santa Marta, April 20, from New York, with 8 bundles brooms for stock.

Axminster, April 23, from Philadelphia, with 19,500 cases dynamite.

Prinz Sigismund, April 23, from New York, with 23 cases paper, 282 barrels sulphate aluminum, 69 barrels lump alum.

Nordpol, April 24, from New York, with 20,004 barrels cement for Atlantic Division; 47,640 bags cement for Pacific Division.

Cristobal, April 26, from New York, with 16,935 barrels cement, 4 cases electric machinery, 21 cases lubricating oil for Atlantic Division; 28 cases castings for Central Division; 72,260 bags cement, 29 cases fire brick for Pacific Division; 5 cases leather for Mechanical Division; 22 bales hose, 21 barrels glassware, 9 cases Babbitt metal, 9 cases wire, 10 cases belt dressing, 126 bundles wheelbarrows, 15 bundles lumber, 8 kegs steel washers, 20 cases motor oil, 349 bales hay for stock; and a miscellaneous cargo, the whole consisting of 90,016 packages, weighing 7,905 tons.

Atenas, April 27, from New Orleans, with 66 cases for Atlantic Division; 1,562 bales hay, 1,606 bags oats, 275 pieces yellow pine lumber for stock; 2,176 bundles lumber for Panama Railroad Company.

Metapan, April 27, from New York, with 3 life boats and 6 life rafts for Pacific Division.

CANAL RECORD

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Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Canal Medals and Bars.

At the close of the last year over four thousand Canal medals had been earned by employes of the Canal and Panama railroad. The medal is awarded to American citizens who complete two years of service on the Canal or Panama railroad, and a bar is awarded for each two years' service additional.

On January 1, there were 93 employes in the Canal and railroad service who were employed in 1904, and were therefore entitled to the second two-year service bar; 707 who were entitled to the first two-year bar, and 860 to the medal. The following statement shows the total number of medals and service bars earned up to January 1:

YEARS.	Medals earned.	Bars earned.
1904-08	2,264	146
1907-09	1,363	....
1905-09	....	535
1908-10	860	....
1906-10	....	707
Total	4,487	1,388

Canal Work in April.

The grand total of Canal excavation to May 1 was 137,750,520 cubic yards, leaving to be excavated 44,787,246 cubic yards, or less than one-fourth of the entire amount for the completed Canal.

The total for April was 2,691,753 cubic yards, as compared with 2,632,468 cubic yards in April, 1910, and 3,454,649 cubic yards in April, 1909. Of the total, 2,661,088 cubic yards were "work excavation," and 30,665 cubic yards were "plant excavation."

The dry excavation amounted to 1,701,919 cubic yards and was principally by steam shovels. The dredges removed 929,357 cubic yards, and 60,477 cubic yards were sluiced, in addition to the amount pumped into Gatun Dam by suction dredges. The progress on the locks at Gatun, Pedro Miguel and Miraflores is referred to elsewhere in this issue.

In the Atlantic Division, the total excavation was 600,396 cubic yards. Of this total, 86,578 cubic yards were dry excavation, and the remainder was removed by the dredges in the Atlantic entrance.

The total excavation in the Central Division was 1,516,439 cubic yards, of which all but 10,336 yards were from the prism.

In the Pacific Division, the total excavation was 574,918 cubic yards, 415,539 cubic yards of which were taken out by the dredges at the Pacific entrance, and 33,509 by the sluicing plant.

A detailed statement of the excavation, and a summary of the work on the locks and dams, follow:

ATLANTIC DIVISION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation
Dry excavation—	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*
Locks, Dam and Spillway	12,548	....	12,548
Mindi	74,030	....	74,030
Total	86,578	....	86,578
Wet excavation—			
Atlantic entrance	492,579	21,239	513,818
Locks, Dam and Spillway	....	....	....
Total	492,579	21,239	513,818
Total wet and dry excavation	579,157	21,239	600,396

CENTRAL DIVISION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation
Dry excavation—			
Culebra Cut	1,404,000	....	1,404,000
Chagres section	75,135	....	75,135
Obispo Diversion	10,336	....	10,336
Wet excavation—			
Chagres section	26,968	....	26,968
Total	1,516,439	....	1,516,439

PACIFIC DIVISION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation
Dry excavation—			
Locks, Dams and Spillways	80,006	....	80,006
Diversions	....	....	....
Prism, south of Pedro Miguel Locks	45,864	....	45,864
Total	125,870	....	125,870
Wet excavation—			
Pacific entrance	439,622	9,426	449,048
Miraflores Locks	....	....	....
Diversious	....	....	....
Total	439,622	9,426	449,048
Total wet and dry excavation	565,492	9,426	574,918

TOTAL CANAL EXCAVATION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation
Dry excavation	1,701,919	....	1,701,919
Wet excavation	959,169	30,665	939,834
Total	2,661,088	30,665	2,691,753

Mean rainfall along Canal (twelve stations) 4 86 inches.

By "Work" Excavation is meant excavation actually made for one of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc.; that is, it represents material taken from the area to be occupied by the Canal, and constitutes excavation useful for the completed Canal.

By "Plant" Excavation is meant excavation outside of any of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc. It includes material necessary to be excavated for construction purposes only and is chargeable against the particular plant item for which it is performed, such as Prism, Diversions, Locks, etc.

DAM AND LOCK CONSTRUCTION.

MATERIAL.	Atlantic.	Pacific.	Total.
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*
Concrete laid in locks.	67,361	67,393	134,754
Concrete laid in dams and spillways	4,169	....	4,169
Fill placed in dams	573,788	81,360	655,148

Erecting the Lock Gates.

The first shipment of material for the gates of Gatun Locks has arrived on the Isthmus, and the work of erecting the south guard gates in the upper or lake level locks will be begun this week. The gates are built up of steel girders, covered with steel plate, forming water tight compartments. Each leaf, of which there are two in a gate, is 7 feet thick, 65 feet long, and range in height from 47 feet 4 inches to 82 feet, the total number for all locks being 92.

One method will be used in erecting all of them. It consists of lowering the material by locomotive crane, operating on a bridge over the lock chamber, and assembling it in false work, after which the gate will be moved into place, as a door would be set on its hinges. The false work, between which the leaves will be assembled, consists essentially of four steel columns, which not only carry the weight of the gate leaf, varying from 300 to 700 tons, but also act as a brace to prevent the leaf from overturning during erection. These columns rest upon a lowering device, which, in turn, rests upon rollers. The leaves are assembled on a radial line, four feet out from their true position, and swung partly open, leaving a 12-foot passage between their miter ends. After the quoin, or hinge end, of the leaf is completed, the whole structure will be rolled back against the hollow quoin, and lowered into position over the pintle.

The lowering device on which the columns rest has been used by the contractors in bridge construction in the States. It consists of two steel bars shaped like a broad "V," with the apexes facing one another. A steel plate passing through the apex of each bar joins them together, and yet permits free vertical movement of the upper bar. Between the adjacent faces of these triangular bars two steel wedges are placed. These wedges are bored and threaded, one right handed and the other left handed, and are moved toward or away from each other by turning a continuous threaded shaft passing through them, the first movement having the effect of forcing the triangular bars apart, and the second, that of drawing them together, the consequent effect on the columns being to raise or lower them. The device has been tested by the Bureau of Standards, and in actual service, for heavier loads than it will

NOTES OF PROGRESS.

(Continued.)

be obliged to bear in the erection of the lock gates. The maximum weight on each column and device, including men and tools, will not exceed 200 tons.

Sinking the Piers for Balboa Lumber Dock.

Work is in progress on nine of the 65 concrete foundation piers required for the new Panama railroad lumber dock at Balboa. The first of these piers had been sunk to a depth of 60 feet below sea level at the close of work on May 6, or within four or five feet of bed rock. At this point a vein of water-bearing gravel was struck, necessitating a continuous operation of the pumps and reducing the downward rate of progress to some extent. The other eight piers have been sunk to varying depths ranging from the first joint, or section, to 50 feet.

The first step in sinking the piers, which have an inside diameter of six feet, is to excavate a hole with a clam-shell bucket, operated by a locomotive crane, to a depth of about 10 feet. The heavy reinforced base of the pier, which somewhat resembles in form a flanged joint of sewer pipe, is then swung into the hole. The earth is next excavated from the bottom by two or more workmen, and is hauled to the surface by motive power furnished by old drilling machines, thence carried to nearby dumps in Decauville cars. The excavation of material continues until the base section has been sunk to a sufficient depth to permit the addition of a six-foot length of the main pier. The forms for this are then placed in position, the reinforcing material, consisting of steel rods arranged in circular rows, assembled therein, after which the concrete is poured, allowed to set, and the pier is then ready for a further descent.

The material encountered in excavating for the piers is mostly clay, and as the water is always present in the holes, it has to be removed in the form of sticky mud. Noisome gases frequently emanate from this mud, especially where rotten wood is encountered, and in these cases, the health and safety of the workmen employed in digging below ground is safeguarded by forcing air into the holes. Notwithstanding these precautions, workmen have been overcome and, in one case, temporarily incapacitated.

Gatun Dam Spillway.

The concrete work in the spillway of Gatun Dam is about 60 per cent completed, 134,657 cubic yards, out of a total of 225,000, having been placed at the close of work on May 6. A statement of the amount laid each day last week, and of the total in place, follows:

DATE.	Concrete Laid.	Hours worked.	Cubic Mixers. No.
May 1	112	5:00	2
May 2	76	4:30	1
May 3	164	14:00	2
May 4	53	3:30	1
May 5	84	2:00	1
May 6	29	2:00	1
Total	518	31:00	1.33
Previously reported	134,139		
Grand total	134,657		

Empire-Chorrera Highway.

It has been decided to make the road from Empire to Chorrera, a distance of six miles, 16 feet wide on the metaled part, about 32 feet from center to center of the drainage ditches. Already the grading has been completed for a mile beyond Empire. The work is being done by penitentiary prisoners, 117 of whom are now employed, with headquarters at Culebra. As soon as two miles of the grading are completed, the prisoners will be moved to a stockade to be built at a point four miles from Empire, and the work will be carried on in both directions from that point. At a point about three-fourths of a mile outside Empire, there is a hill with an eight per cent grade, but barring this, the heaviest grades encountered on the location are not over six per cent.

It is proposed to build a road from the Chorrera highway to Arraijan, a distance of three miles, but this has not yet been determined upon.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Over 63 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of work on May 6, being 1,321,111½ cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending May 6, and of the total, follows. and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers.		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
May 1	2,246	39:02	6	536	8:40	2	234¾	3,016¾
May 2	2,196	36:34	6	434	7:40	2	178	2,808
May 3	2,064	31:32	6	630	8:40	2	216	2,910
May 4	1,946	39:54	6	576	8:40	2	172	2,694
May 5*	1,761	37:03	6	638	8:40	2	262¼	2,661¼
May 6	1,826	32:48	6	802	9:40	2	203	2,831
**Portable mixers				407				407
Total	12,039	216:53	6	4,023	52:00	2	1,266	17,328
Previously reported								1,303,783½
Grand total								1,321,111½

*Power off at 5.30 p. m. on May 5, due to broken water main.

**The 407 yards shown for the portable mixers are reinforced concrete, and were placed on the following days: May 1st, 23 yards; May 2d, 107 yards; May 3d, 72½ yards; May 4th, 76½ yards; May 5th, 56½ yards; May 6th, 71½ yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is about 77 per cent completed, 642,182 cubic yards, out of a total of 837,400, having been placed at the close of work on May 6. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-Cubic yard mixers			AUXILIARY PLANT.						Large stone.	Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete Placed.	Hours worked	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
May 1	694	12:00	2	552	11:50	2	120	7:75	1		1,366
May 2	238	6:00	2	684	13:00	2	118	7:50	1		1,040
May 3	166	4:00	2	598	11:50	2	55	3:50	2		819
May 4	272	6:00	2	420	8:00	2	152	12:75	3		844
May 5	290	6:00	2	648	13:50	2	136	12:25	2		1,074
May 6	378	8.00	2	650	14:00	2	136	14:25	3		1,164
Total	2,038	42:00	2	3,552	71:50	2	717	58:00	2		6,307
Previously reported										4,187	635,875
Grand totals										4,187	642,182

MIRAFLORES LOCKS.

Over 16 per cent of the concrete for the system of two twin locks at Miraflores was in place on May 6, the total amount on that date being 224,381 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT.							Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
May 1	952	17:08	4	92	2:00	2	506	22:50	4		1,625
May 2	776	15:92	4	192	4:00	2	583	23:00	3		1,615
May 3	1,002	14:17	4	200	4:00	2	628	34:00	5		1,880
May 4	674	10:25	4	252	5:33	2	635	30:25	5		1,603
May 5	1,266	21:67	4	258	5:00	2	508	27:75	4		2,032
May 6	1,222	22:25	4	210	4:30	2	245	14:75	3		1,677
							*231	23:50	1		
Total	5,892	101:34	4	1,204	24:63	2	3,336	175:75	4.17		10,432
Previously reported										3,693	213,949
Grand total										3,693	224,381

*The 231 yards were mixed by a ½-yard mixer, the amounts for each day being: May 1st, 75 yards; May 2d, 64 yards; May 3d, 50 yards; May 4th, 42 yards.

STEAM SHOVEL RECORDS.

Work of Central Division and P. R. R. Relocation Shovels in April.

During the month of April the total amount of material excavated in the Central Division was 1,516,439 cubic yards, of which 271,650 cubic yards were classified as earth and 1,244-789 cubic yards as rock

Of this quantity, 1,470,752 cubic yards were removed by steam shovels, 2,788 cubic yards by scrapers, 8,956 cubic yards by bucket cranes, and 2,543 cubic yards by hand. Contractors removed 26,968 cubic yards by sluicing, and 4,432 cubic yards by hand.

The high record for the month was made by shovel No. 212, working 24 days in the Culebra district, which excavated 49,563 cubic yards of rock. The second best record for the month was made by shovel No. 206, working 24 days in the Culebra district, which excavated 49,290 cubic yards of rock.

The best record for a shovel of the 70-ton class was made by shovel No. 124, working 24 days in the Culebra district, which excavated 39,652 cubic yards of rock and earth.

Shovel No. 215, working in the Empire district, made a high record for one day by excavating 2,945 cubic yards of rock on April 7. Shovel No. 128, working in the Chagres district, excavated 1,678 cubic yards of earth on April 4, and this is the high record for one day for a shovel of the 70-ton class, during the month.

Except where noted, monthly reports are computed by place measurement, while the daily reports are based on car measurement. The best records for the month, and for one day, are shown below:

BEST RECORDS FOR THE MONTH.

SHOVEL No.	CUBIC YARDS.			
	Earth.	Rock.	Total.	No. of days at work
CHAGRES DISTRICT.				
114	15,157	....	15,157	12
128	14,660	....	14,660	14
EMPIRE DISTRICT.				
215	3,147	41,768	44,915	24
222	....	39,832	39,832	24
226	....	38,512	38,512	24
CULEBRA DISTRICT.				
212	....	49,563	49,563	24
206	....	49,290	49,290	24
230	9,149	36,597	45,746	24
PEDRO MIGUEL.				
231	....	24,590	24,590	22

BEST RECORDS FOR ONE DAY.

Shovel.	LOCATION.	Date.	Character of material excavated.	Cubic yards.
128	Chagres	April 4	Earth	1,678
114	Chagres	April 5	Earth	1,656
132	Chagres	April 1	Earth	1,600
215	Empire	April 7	Rock	2,945
226	Empire	April 20	Rock	2,666
226	Empire	April 24	Rock	2,653
228	Empire	April 5	Rock	2,470
205	Culebra	April 21	Rock	2,880
223	Culebra	April 11	Rock	2,793
212	Culebra	April 5	Rock	2,739
231	Pedro Miguel.	April 24	Rock	1,900
231	Pedro Miguel.	April 22	Rock	1,900
231	Pedro Miguel.	April 21	Rock	1,862
231	Pedro Miguel.	April 26	Rock	1,824

Relocated Line, Panama Railroad.

The total excavation on the relocated line of the Panama railroad for the month of April was the largest since the work began, amounting to 414,130 cubic yards, place measurement. During March, which had three more working days, 408,180 cubic yards were taken out, the record until this time.

Of the April excavation, 192,269 cubic yards were classified as earth; 27,462 yards as loose rock, and 194,399 yards as solid rock. A total of 400,920 cubic yards was removed by company forces—366,194 yards by steam shovels, 31,180 yards by pan car task work, and 3,546 yards by culvert gangs. The contractor removed 13,210 cubic yards.

The best steam shovel record was made by steam shovel No. 257, on the Gatun section, which excavated 62,540 cubic yards of rock in 24 working days. In the 70-ton class, the best record was made by steam shovel No. 105, on the Monte Lirio section, which excavated 35,330 cubic yards of earth, and 5,400 cubic yards of rock, a total of 40,730 cubic yards in 24 working days.

The high record for one day for 5-yard shovels was made by steam shovel No. 262, working at Monte Lirio, which excavated 3,500 cubic yards of rock and earth on April 29. The high record for one day for 3-yard shovels was made by steam shovel No. 105, working near Monte Lirio, which excavated 2,200 cubic yards of earth on April 7.

BEST RECORDS FOR THE MONTH.

SHOVEL No.	Location.	Cubic Yards by Cross Section.			
		Days worked.	Earth	Rock.	Total.
257	Gatun	24	....	62,540	62,540
262	M. Lirio	24	21,000	33,000	54,000
105	M. Lirio	24	35,330	5,400	40,730
110	Paraiso	24	25,921	12,720	38,641

Total output during month of April, 1911, 366,194 cubic yards.

Total number steam shovel working days, 212.

Average output per working day, 1,727 cubic yards.

Product of School Garden.

The garden at Empire school for colored children was planted in December, and the harvesting was begun in February. About one-half an acre was under cultivation in vegetables and 1½ acres in papayas and bananas. All the work, except the initial spading, was done by pupils under the direction of a scientific gardener, one of the aims being to teach the colored pupils how to make a living in truck gardening after their fathers can no longer procure work on the Canal. In this respect the results are encouraging, because both boys and girls have shown great interest in this practical work. The vegetables and bananas are given to the children, but a careful count is kept of all of them, and those harvested up to May 1 would have sold at the following prices in the Empire market:

ITEM.	Amount and Price.	Total.
Tomatoes	1,600 pounds at 10 cents	$160.00
Beans	350 pounds at 15 cents	52.50
Cabbage	208 pounds at 3 cents	6.24
Cucumbers	30 pounds at 12 cents	3.60
Radishes	250 bunches at 10 cents	25.00
Okra	50 dozen at 10 cents	5.00
Bananas	200 bunches at 35 cents	70.00
Total value		$322.34

Value of Property Purchased from French.

The value of property transferred to the United States by the New Panama Canal Company of France, under the $40,000,000 purchase, is to be determined by a committee, appointed by the chairman, consisting of Messrs. J. B. Bishop, A. B. Nichols, W. G. Comber, A. S. Zinn, Lieut. W. D. Smith, Messrs. Ad. Faure, R. W. Hart, and H. S. Farish. The amount of excavation by the French, which is useful in the present Canal, was determined, after investigation by a committee which reported on December 6, 1909, to be about 30,000,000 cubic yards. A similar determination will be made of the buildings, machinery, stores, Panama railroad shares, and other property included in the purchase.

Fire at Bas Obispo.

In a fire at Bas Obispo on the night of May 7, seven private buildings were destroyed, and the three months' old child of a colored woman named Maud Griffith was burned. The fire was in a private building of frame construction, and had gained great headway before an alarm was sent in.

A new school building for colored children will be erected at Cristobal on the Mount Hope road, to take the place of that destroyed in the Colon fire of March 23. It will be made of two laborers' barracks moved from Tabernilla, and will have four rooms, each 25 by 30 feet.

Pacific Division Sand Service.

Sand was supplied in April by the Pacific Division service, as follows:

DESTINATION.	Number of cars.	Cubic Yards.
Pacific Division	2,356	35,340
Central Division	18	270
Atlantic Division	18	418
Quartermaster's Department	3	75
Sanitary Department	2	50
Panama railroad	6	150
Miscellaneous	10	175
Total	2,413	36,478

Work of Central Division Unloaders.

The following statement shows the number of Lidgerwood cars unloaded by the Central Division during the month of April:

LOCATION.	No. of unloaders.	No. of trains.	No. of Cars.
Balboa	3	1,004	20,080
Miraflores	3	730	14,594
Gamboa	4	1,096	22,981
Total	10	2,830	57,655

Ancon Crusher.

A statement of the rock crushed at Ancon quarry during the week ending May 6, follows:

DATE.	Hours worked.	Cubic Yards.
May 1	7:30	2,958
May 2	7:40	2,033
May 3	8:00	2,616
May 4	8:00	2,614
May 5	8:20	2,761
May 6	7:20	2,947
Total	46:50	15,929

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the week ending May 6, follows:

DATE.	Hours worked.	Cubic Yards.
May 1	6:57	2,958
May 2	5:54	2,076
May 3	5:46	2,671
May 4	7:06	3,052
May 5	5:08	2,295
May 6	7:05	3,208
Total	37:56	16,260

RECORD OF CANAL WORK SINCE AMERICAN OCCUPATION.

MONTHLY TOTALS BY CUBIC YARDS OF EXCAVATION AND LOCK AND DAM CONSTRUCTION.

[*All figures are of work useful for the completed Canal.*]

DRY EXCAVATION.

CENTRAL DIVISION.

MONTHS.	CULEBRA SECTION.*								CHAGRES SECTION.**				
	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
January	....	70,650	120,990	566,750	1,227,022	1,150,249	1,323,693	1,356,394	....	169,447	389,399	175,802	255,385
February	....	75,200	168,410	639,112	1,248,265	1,194,454	1,259,173	1,409,338	....	200,145	450,182	286,309	219,550
March	....	132,840	239,178	815,270	1,290,885	1,434,597	1,509,728	1,728,748	....	324,233	619,491	484,846	297,339
April	....	126,749	213,177	879,527	1,242,574	1,272,746	1,288,845	1,414,336	....	329,483	510,020	428,777	102,103
May	27,556	75,935	196,209	690,365	960,840	1,126,963	1,099,279	....	....	235,902	386,170	248,974	....
June	32,551	76,905	212,623	624,586	1,134,032	1,242,134	1,305,141	....	....	322,145	275,900	164,389	....
July	31,599	78,570	159,789	770,570	1,121,325	1,200,828	1,153,810	....	....	345,757	233,897	166,106	....
August	35,056	49,210	244,823	786,866	1,171,927	1,173,370	1,377,714	....	2,900	368,683	231,543	234,404	....
September	25,220	44,085	291,452	753,468	1,122,860	1,235,978	1,339,948	....	21,546	346,948	235,818	234,290	....
October	19,695	52,940	327,009	834,499	1,160,101	1,302,901	1,320,314	....	25,627	424,911	221,409	271,409	....
November	28,860	60,540	221,642	790,632	1,022,576	1,070,792	1,209,554	....	44,044	336,390	93,619	260,882	....
December	42,935	70,630	307,689	1,025,485	1,210,046	1,152,022	1,211,400	....	98,652	383,948	105,044	197,481	....
Totals	243,472	914,254	2,702,991	9,177,130	13,912,453	14,557,034	15,398,599	5,908,816	192,769	3,787,992	3,752,492	3,153,669	874,377

ATLANTIC DIVISION. PACIFIC DIVISION.

MONTHS.	ATLANTIC DIVISION.						PACIFIC DIVISION.							
	COLON (MINDI)†		GATUN LOCKS, DAM AND SPILLWAY.††				PEDRO MIGUEL LOCKS.‡				MIRAFLORES LOCKS, DAMS AND SPILLWAY.‡‡			
	1909.	1911.	1908.	1909.	1910.	1911.	1908.	1909.	1910.	1911.	1908.	1909.	1910.	1911.
January	45,664	....	292,155	102,690	125,011	65,889	....	83,726	27,320	15,690	7,203	61,202	31,479	48,744
February	46,046	47,102	282,797	95,031	123,738	50,511	....	58,242	9,486	6,809	39,046	53,689	15,300	12,936
March	70,713	49,734	374,598	90,051	132,007	51,431	....	95,624	6,784	674	73,194	51,417	18,184	72,739
April	74,368	74,030	373,456	70,009	103,243	12,548	....	101,365	9,129	255	98,943	60,060	12,148	79,751
May	71,407	....	266,747	52,786	82,958	....	....	57,523	10,405	....	73,023	47,588	20,250	....
June	80,101	....	244,951	36,556	88,088	....	13,228	70,971	8,420	....	68,691	55,653	21,994	....
July	82,378	....	213,359	39,058	95,503	....	22,648	77,503	4,410	....	104,369	50,999	11,990	....
August	66,249	....	188,262	40,346	99,737	....	22,217	58,025	12,789	....	94,248	35,446	17,548	....
September	61,437	....	145,990	49,945	103,040	....	28,833	48,825	10,405	....	90,923	31,803	8,590	....
October	72,643	....	154,064	57,321	118,327	....	48,875	39,002	7,433	....	74,700	25,349	9,850	....
November	42,009	....	118,278	63,452	94,552	....	55,401	20,207	10,636	....	52,930	18,644	9,400	....
December	....	....	119,904	96,590	72,030	....	65,578	28,342	11,195	....	69,650	20,083	17,906	....
Totals	713,015	170,866	2,774,561	793,835	1,238,234	180,379	256,780	739,355	128,412	23,428	846,920	511,933	194,639	214,170

*Total to May 1, 1911, 62,814,749 cubic yards.

**Total to May 1, 1911, 11,761,299 cubic yards, of which 85,587 cubic yards were removed by sluicing.

†Total to May 1, 1911, 1,647,687 cubic yards; in this total are included 172,851 cubic yards removed in 1907, and 590,955 cubic yards removed in 1908.

††Total to May 1, 1911, 6,353,816 cubic yards; in this total are included 26,628 cubic yards excavated October to December, 1906, and 1,340,179 cubic yards in 1907.

‡Total to May 1, 1911, 1,147,975 cubic yards.

‡‡Total to May 1, 1911, 1,767,662 cubic yards. There were also 78 233 cubic yards excavated at Balboa locks and dams in 1907. There were removed 328,860 cubic yards at different points in prism to May 1, 1911. There were also 172 cubic yards removed by steam shovels outside of prism during October, 1908.

WET EXCAVATION.

M'THS.	ATLANTIC DIVISION.							PACIFIC DIVISION.								
	ATLANTIC ENTRANCE.§					GATUN LOCKS †		PACIFIC ENTRANCE.§§							Miraflores Locks.§§§	
	1907.	1908.	1909.	1910.	1911.	1908.	1909.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1910.	1911.
Jan	111,100	490,701	521,050	510,055	520,181	....	97,043	....	95,940	94,710	460,250	469,529	518,936	379,810	....	89,243
Feb	110,002	427,722	444,910	493,448	455,318	....	132,291	....	95,940	93,480	663,519	671,477	285,791	386,866	....	87,335
March	84,145	546,886	461,208	412,325	391,736	....	141,838	....	116,820	92,319	783,281	865,696	462,588	639,761	....	....
April	69,889	496,366	470,635	190,574	492,579	....	17,938	....	110,700	104,855	676,539	731,767	534,322	439,622	....	....
May	133,847	564,386	315,370	447,578	....	....	52,011	....	112,340	122,157	530,466	720,753	484,509	....	....	....
June	124,118	572,749	182,575	458,021	....	....	38,829	50,676	62,697	133,575	656,621	844,685	475,486	....	....	....
July	109,922	625,497	348,451	423,092	....	....	....	41,533	98,400	108,338	696,170	733,181	515 782	....	....	....
August	194,297	638,217	422,846	508,829	....	....	....	54,530	111,930	168,284	737,774	623,263	506,969	....	....	....
Sept	403,842	624,776	410,574	451,873	....	....	....	114,308	105,780	153,975	750,080	662,976	473,585	....	....	....
Oct	415,120	505,260	314,778	549,788	....	....	....	81,836	97,170	357,122	762,276	720,920	467,873	....	40,000	....
Nov	422,797	570,832	457,889	600,708	....	....	....	71,176	92,988	365,423	609,089	627,791	425,870	....	47,444	....
Dec	442,835	679,604	489,121	482,370	....	8,583	....	71,094	90,528	349,551	729,960	727,460	387,034	....	68,681	....
Totals	2,621,914	6,742,996	4,839,407	5,528,661	1,859,814	8,583	479,950	485,153	1,191,233	2,143,789	8,056,025	8,399,498	5,538,745	1,846,059	156,125	176,578

§Total to May 1, 1911, 23,020,257 cubic yards; in this total are included 399,820 cubic yards excavated in 1905, and 1,027,645 cubic yards in 1906.

§§Total to May 1 , 1911, 27,660,502 cubic yards. Of this amount, 125,466 yards were removed by monitors.

§§§Total to May 1, 1911, 642,350 cubic yards; in this total are included 309,647 cubic yards excavated in 1909.

†Total to May 1, 1911, 488,533 cubic yards. There were also 38,425 cubic yards removed by dredges at Gatun Dam site in 1907.

CONCRETE IN LOCKS AND DAMS.

MONTHS.	GATUN LOCKS.			PEDRO MIGUEL LOCKS.			MIRAFLORES LOCKS.		
	1909.	1910.	1911.	1909.	1910.	1911.	1909.	1910.	1911.
Jan	....	54,136	72,919	....	16,273	38,513	....	....	24,018
Feb	....	55,696	72,103	....	13,218	37,011	....	146	20,896
March	....	60,998	86,884	....	18,793	44,716	....	314	31,173
April	....	63,227	67,361	....	24,522	28,635	....	13	38,758
May	....	74,273	....	....	29,576	....	....	27	....
June	....	89,401	....	....	30,631	....	....	1,603	....
July	....	84,001	....	....	41,464	....	28	3 672	....
Aug	1,298	85,686	....	....	51,264	....	74	6,030	....
Sept	12,294	76,720	....	2,370	50,702	....	....	18,133	....
Oct	29,378	86,949	....	8,310	61,422	....	....	22,159	....
Nov	30,270	75,152	....	10,169	64,248	....	....	23,871	....
Dec	42,832	80,212	....	13,007	42,834	....	....	21,533	....
Total	116,072	886,451	299,267	33,856	444,947	148,875	102	97,501	114,845

From March 17, 1909, to May 1, 1911, there were placed in the Spillway of Gatun Dam 135,861 cubic yards of concrete, including 4,169 cubic yards placed in April, 1911; in Miraflores Dam there were placed 321 cubic yards up to May 1, 1911.

FILL PLACED IN DAMS.

M'THS.	GATUN.*				PEDRO MIGUEL.†		MIRAFLORES.‡			
	1910.		1911.		1910.	1911.	1910.		1911.	
	Wet.	Dry.	Wet.	Dry.	Dry.	Dry.	Wet.	Dry.	Wet.	Dry.
Jan	178,254	236,994	211,992	218,690	....	....	....	28,151	89,243	24,685
Feb	292,215	271,788	301,733	211,008	11,510	....	....	1,438	87,335	32,404
Mar	210,387	332,661	342,800	255,047	22,860	....	....	5,385	25,131	23,940
April	242,440	263,437	368,658	205,130	31,394	....	....	....	14,100	67,260
May	249,283	194 868	....	....	23,572	....	....	6,480	....	....
June	384,166	258,653	....	....	1,350	....	....	7,356	....	....
July	462,092	180,111	....	....	....	....	....	4,290	....	....
Aug	406,606	229,774	....	....	....	....	....	10,898	....	....
Sept	457,637	223,102	....	....	....	....	....	11,220	....	....
Oct	480,732	259,619	....	....	....	....	40,000	14,370	....	....
Nov	129,666	266,105	....	....	....	....	47,444	8,960	....	....
Dec	243,121	169,575	....	....	....	....	68,681	39,224	....	....
T'tal	3,736,599	2,886,687	1,225,183	889,875	90,686	....	156,125	137,772	215,809	148,289

*Dry fill begun in January, 1907, and 2,096,477 cubic yards of wet, and 3,241,418 cubic yards of dry fill were placed in 1907, 1908 and 1909.

†170,166 cubic yards placed in dams up to December, 1909, inclusive.

‡138,587 cubic yards of wet fill and 472,091 cubic yards of dry fill were placed in dams up to December, 1909.

CANAL EXCAVATION TO DATE.

By French Companies		78,146,960
French excavation useful to present Canal		29,908,000
By Americans—		
Dry excavation	85,814,866	
Dredges	51,935,654	
Total		137,750,520
May 4 to December 31, 1904	243,472	
January 1 to December 31, 1905	1,799,227	
January 1 to December 31, 1906	4,948,497	
January 1 to December 31, 1907	15,765,290	
January 1 to December 31, 1908	37,116,735	
January 1 to December 31, 1909	35,096,166	
January 1 to December 31, 1910	31,437 677	
January 1 to April 30, 1911	11,343,456	

TOTALS BY DIVISIONS AND AMOUNT TO BE EXCAVATED.

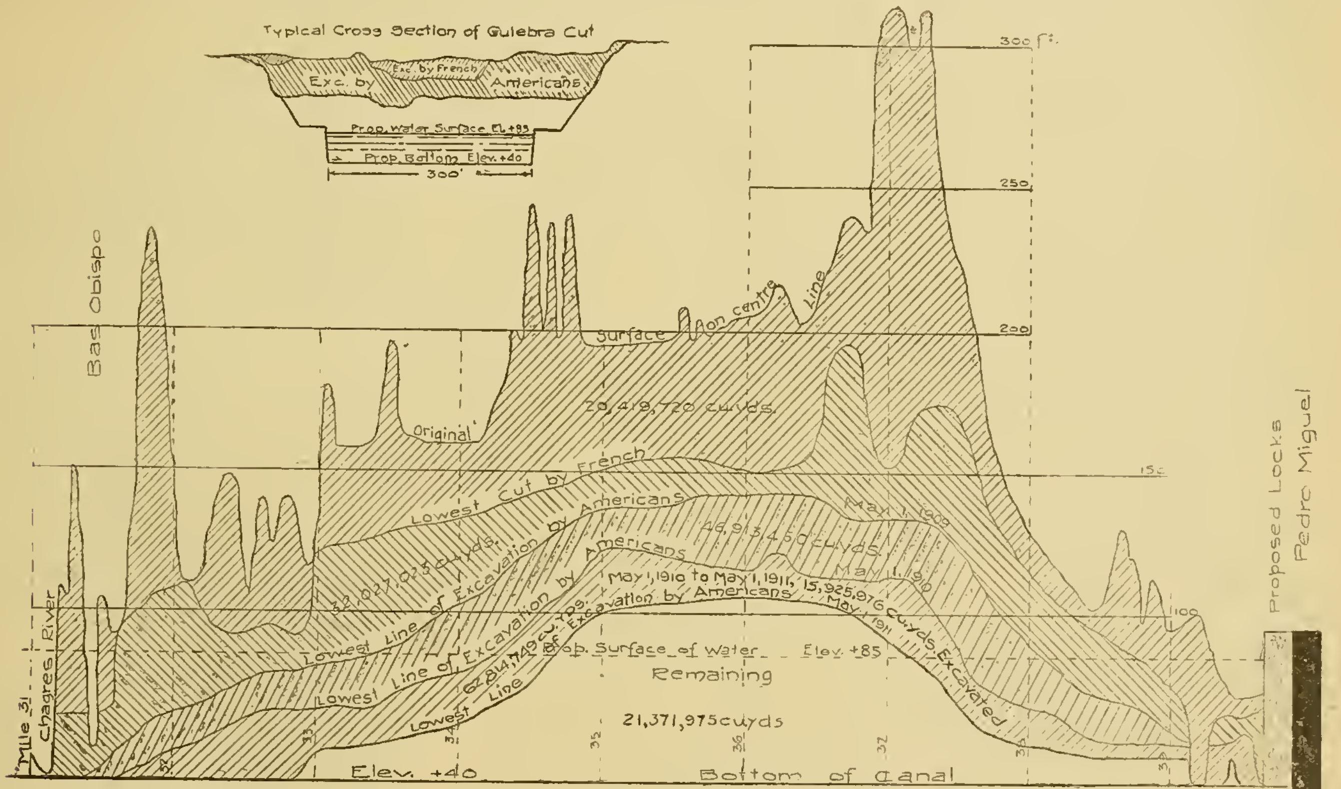
DIVISIONS.	Amount excavated.		Remaining to be Excavated.	
Atlantic—				
Dry excavation	8,001,503	31,548,718	271,551	11,808,627
Dredges	23,547,215		11,537,076	
Central—				
Culebra Cut	62,814,749	74,576,048	21,371,975	22 548,970
All other points	11,761,299		1,176,995	
Pacific—				
Dry excavation	3,322,902	31,625,754	3,057,240	10,429,649
Dredges	28,302,852		7,372,409	
Grand totals		137,750,520		44,787,246

SEVEN YEARS OF CANAL WORK.

Progress of Construction—New Features Developed.

The seventh year of Canal construction by Americans ended on May 4, at which date about 138,000,000 cubic yards of excavation, or more than three-fourths of the entire amount estimated for the completed Canal, had been accomplished, leaving only about 44,000,000 cubic yards to be removed. The year was marked by a general advance of the work in amount accomplished, and by a constant decrease in the cost.

A new development of an old factor in the completion of the Canal was the increase in the slides in Culebra Cut, where the banks have broken in 22 places between Pedro Miguel Locks and the Chagres River at Gamboa, a distance of nine miles. An addition of 6,104,000 cubic yards was made to the estimate of the total amount to be excavated, as an allowance for the slides, and the amount in motion, or that has given an indication of probable movement, does not exceed this. This amount may be increased, but this causes no apprehension as after the locks are completed it will be possible to concentrate dredges for removal of the material that remains and which may slide in, enabling the work to proceed much more expeditiously and much more economically.


Typical Cross Section of Culebra Cut
Exc. by French
Exc. by Americans
Prop. Water Surface El. +85
Prop. Bottom Elev. +40
300'
Bas Obispo
Mile 31
Chagres River
Original
Surface
Surface on centre Line
20,419,720 cu. yds.
Lowest Cut by French
Lowest Line of Excavation by Americans
32,027,025 cu. yds.
May 1, 1909
46,913,450 cu. yds.
Lowest Line of Excavation by Americans
May 1, 1910
62,814,749 cu. yds.
Lowest Line of Excavation by Americans
May 1, 1911
May 1, 1910 to May 1, 1911, 15,925,976 cu. yds. Excavated
Prop. Surface of Water Elev. +85
Remaining
21,371,975 cu. yds
Elev. +40
Bottom of Canal
32
33
34
35
36
37
38
39
300 ft.
250
200
150
100
Proposed Locks
Pedro Miguel

Profile of Culebra Cut
Showing Material Excavated and to be Excavated.

Of the total of 44,787,246 cubic yards of excavation remaining, 21,371,975 cubic yards are in Culebra Cut. The rate of progress in this section of the work, as compared with other years ending May 1, is shown in the following table, and graphically, by the profile published on this page:

May 1 to May 1.	Cubic Yards.
1904–1905	648,911
1905–1906	1,250,570
1906–1907	4,861,895
1907–1908	11,285,217
1908–1909	13,955,753
1909–1910	14,886,427
1910–1911	15,925,976
Total	62,814,749
Amount remaining	21,371,975

A statement showing the advance of excavation in all parts of the work is published elsewhere in this issue.

Lock Construction.

The placing of concrete in all the locks is 52 per cent completed, 2,153,386, out of a total of 4,284,000 cubic yards, having been placed up to May 1, and of this amount 1,694,086 cubic yards were placed in the past year. At Gatun, 951,661 cubic yards were placed during the year, and there remain to be placed 783,210 cubic yards before the concrete work is completed. The installing of the lock gates has been begun, and the installation of machinery for gate operation and towing of ships, of the emergency dams and operating machines, will be carried on in the upper locks, while concrete laying advances in the lower flights.

A total of 737,425 cubic yards of concrete was placed in the Pacific locks during the year, and there remain to be placed 1,349,576 yards. The locks at Pedro Miguel are nearing completion, and those at Miraflores are fairly begun, and will advance with greater rapidity as soon as the cantilever mixing and handling plant is fully installed.

Gatun Dam.

The estimated dry fill for the toes of Gatun Dam is 8,346,778 cubic yards, and there has been placed up to May 1 a total of 7,017,980 yards. It is probable that the amount of material actually dumped in the toes of the dam will greatly exceed the estimated total. The total hydraulic fill is estimated at 11,653,222 cubic yards, and of this amount 7,058,559 cubic yards were in place on May 1. The total estimated fill is 20,000,000 cubic yards, and 70 per cent of this amount was actually in place on May 1.

In the spillway the concrete work is 60 per cent completed, and has reached a stage where it may be continued during the rainy season. There remains to be constructed the concrete dam across the channel, and to be erected thereon the regulating gates.

Other Developments of the Year.

The relocation of the Panama railroad above Gatun Lake was completed to such an extent that regular trains may use it between Gatun and Bas Obispo in case high water in the lake region makes the old line between those points impassable. The location on the 95-foot level through Culebra Cut was changed to one parallel with the Canal, but far enough east of it not to be interfered with by slides.

The breakwater at the Pacific entrance to the Canal, extending from Balboa to Naos Island, was advanced to a point 13,000 feet from shore, and now lacks about 4,000 feet of completion. The breakwater at the Atlantic entrance, which will extend from Toro Point about 10,500 feet into Limon Bay, was begun in August, 1910, and on May 1, the fill had been advanced to 4,214 feet from shore.

Plans were approved for terminal docks and basins at both entrances. The basin at the Pacific entrance will be at Balboa, where work has been begun on the first of a series of reinforced concrete docks. The docks at the Atlantic entrance at Cristobal will consist of a series of reinforced concrete docks, or slips, reached from shore by a mole which will extend about 3,300 feet into the bay and serve as a breakwater to protect the harbor on the south.

Plans for buoying and lighting the Canal and its approaches have been adopted, and the work of clearing the ranges in the lake region has been begun.

The Government adopted the policy of fortifying the Canal on March 4, 1911, when the bill appropriating $3,000,000 for initial expenditures was approved.

SOCIAL LIFE OF THE ZONE.

Church Notes.

The Rev. W. W. Gray, who for two years has been pastor of the Methodist Episcopal church in Panama and visiting chaplain in the Commission service, has resigned and will leave the Isthmus accompanied by Mrs. Gray on May 31. His successor, the Rev. Harry Compton will sail from New York on May 12. Mr. Compton has been for 27 years in charge of the Methodist work in Ecuador, and has just completed a year's leave of absence in the States. He has a wife and two daughters who will accompany him. The pastor's family will occupy the rooms of the parsonage over the church on the sea wall.

There were 30 women present at the meeting of the Women's Foreign Missionary Society held at the home of Mrs. E. W. Keyser, Ancon, on Friday afternoon, May 4, among them visitors from Culebra and Paraiso, and the members of the Empire Auxiliary to the Christian League. The meeting was opened with a devotional service, followed by a program of special music. A window will be placed in the parsonage dedicated to the organizers of the society. Since the organization of the society two and a half years ago, scholarships have been maintained in the Methodist college in Panama. There are 15 active members, and two life memberships of $20 each, which have been paid by Mrs. Gray and Mrs. J. L. Webster. The study hour on Friday afternoon was devoted to the consideration of the lifes of Christian women in the Orient. Papers were read by Mrs. Gray, Mrs. Z. E. Bossomaier, Mrs. J. Stokoe, Mrs. E. W. Price, and Mrs. John M. Holt. Mrs. Andrew Atchison was in charge of this division of the program. Mrs. J. M. Holt has been elected treasurer, vice Mrs. Gray resigned. Mrs. Webster is also resigning from active membership and will leave the Isthmus on May 29 for an indefinite sojourn in southern California.

Miscellaneous Events.

On April 29, the Red Men, assisted by the auxiliary order, the Daughters of Pocahontas, held a masquerade ball at the lodge hall in Las Cascadas for the benefit of the order. There were 40 couples present.

At a dance held recently by the Pythian Sisters in Las Cascadas, $120 was made. The sum will be placed in the treasury of the order.

The Grand Auxiliary Order of the B. of L. E. held a dance in the lodge hall at Paraiso on April 22 for the benefit of the home for disabled railroad men at Highland Park, Ill.

Dinner of the 1904 Employes.

The fourth annual dinner of the employes, whose term of service with the Isthmian Canal Commission on the Isthmus began during the year 1904, was held at the Hotel Tivoli on Thursday evening, May 4, the day on which the French Canal Company formally turned over its possessions on the Isthmus to the United States. There was an attendance of 29, out of a total of about seventy-one 1904 men now on the Isthmus. The greater part of these men are still in the service of the Commission, although a few have left and engaged in other pursuits. The banquet was presided over by Col. W. C. Gorgas; Col. Tom M. Cooke acted as toastmaster, and informal speeches were made. Those present were: A. B. Nichols, D. E. McDonald, Patrick Kenealy, Thos. J. Walsh, Lloyd Noland, L. E. DuBois, W. L. Power, Alex A. Lundisheff, M. C. Pratt, M. W. Tenny, Geo. H. Ruggles, C. L. Stockelberg, J. J. Moran, F. E. Moore, A. B. Herrick, H. A. Gudger, C. C. Pierce, J. C. Perry, J. A. LePrince, O. S. Boyd, L. G. Thom, C. L. Parker, D. E. Wright, J. D. Illia, Tom M. Cooke, W. C. Gorgas, Frank Cotton, Earle C. McFarland.

During the evening an association was formed, with Col. Gorgas as its president, to be known as the "Incas."

St. Ferdinand's Church at Empire.

A Commission building opposite the garden of St. Ferdinand's church in Empire has been assigned to the church to be reconstructed into a parish house. There will be three rooms at the eastern end for the resident priests, a hall running through the center for social gatherings, and two additional rooms for visiting priests at the western end, where there will also be the refectory and kitchen. A social hall will be partitioned into two parlors for the meetings of the altar societies and other organizations, but it will be so arranged that it will be possible to throw the suite into one room. Several rooms down stairs will be converted into schoolrooms for the rector's Spanish classes, and it is also purposed to establish a night school for the young West Indian men of the parish. The building dates from the French occupation and has been used as bachelor quarters. The remodeling will be done at the expense of the church, and will cost $1,500, of which $1,000 have been paid. The building will be occupied in the beginning of June.

As a result of the recent visit of the Very Rev. Father McHale of the Vincentian Fathers, it is expected that, in addition to the Rev. Father Allot, the rector of the parish, two priests of the Order of St. Vincent will be sent to the work at Empire.

Easter gifts to the church in April were a brass sanctuary lamp, a private gift; a baptismal font, given by the Altar Society, and the Stations of the Cross, presented by the men's club.

A. A. O. N. M. S.

All nobles of the Ancient Arabic Order of Nobles of the Mystic Shrine on the Isthmus are requested to be present at a meeting to be held at Gatun on Sunday, May 14, 1911, at 3 p. m., to discuss a matter of importance.

FRANCIS W. WALRAVEN.

Las Cascadas, C. Z. May 3, 1911.

Observance of Fourth of July.

In a circular dated May 5, the Chairman has requested the heads of departments and divisions to appoint representatives to attend a meeting in the Administration building in Ancon on Saturday, May 13, at 2 p. m., to consider the question of a celebration of Independence Day by Americans on the Isthmus. The letter states:

> Among the questions which should be discussed and decided are:
>
> 1. Shall such a celebration be arranged for?
> 2. If so, the program and general location of the celebration, or celebrations.
> 3. Organization for making the necessary arrangements, raising subscriptions, etc.
>
> Such celebrations are intended to be arranged by, and for the benefit of Americans on the Isthmus, and it is intended that the planning and execution of any celebration shall be in accordance with the views of the majority.
>
> Please advise me as soon as practicable the representatives you designate to attend this meeting (who will be expected to act on this committee until further notice). Your representative should be instructed to canvass the sentiment among the employes in their department or division prior to the meeting on May 13, so that they may be able to act with a full knowledge of the views of those whom they represent at the meeting on May 13. The Disbursing Officer will be a member of this committee ex-officio, and any other head of a department or division may likewise act ex-officio as a member of this committee and be present at the meeting. The committee is authorized to appoint any additional members to act with it.

Commissioner H. H. Rousseau will act as General Chairman of the Fourth of July Celebration Committee, and Mr. George A. Ninas will be present as a member, and act as secretary of the committee.

PERSONAL.

Capt. F. C. Boggs is a passenger on the *Panama*, scheduled to arrive in Cristobal on May 12.

Mr. John M. G. Watt arrived on the *Zacapa* on Thursday, May 4, from his leave of absence in the United States.

Mr. Edward C. Sherman, Designing Engineer, accompanied by Mrs. Sherman and their daughter, sailed for the States on the *Ancon* on May 10. Mr. Sherman has completed the designs for the spillways at Gatun and Miraflores, of which he was in charge, and his resignation has been accepted to take effect at the expiration of his leave. He will engage in consulting engineering, as principal assistant engineer, with the firm of Barrows and Breed, at 6 Beacon street, Boston, Mass.

Berths on the "Panama".

CULEBRA, C. Z., May 6, 1911.

HEADS OF DEPARTMENTS AND DIVISIONS:

As only a few scattered berths remain open for assignment on the steamship *Panama*, scheduled to sail from Cristobal on Thursday, May 18, any further requests submitted for this sailing should be confined to employes traveling alone. A few single berths are available for women unaccompanied by children.

By direction of the Chairman.

C. A. MCILVAINE, *Chief Clerk.*

Obituary.

Daniel Holland, son of Jeremiah Holland, living at Empire, died at Ancon Hospital on May 3. He was 12 years of age, and had been on the Isthmus nearly a month.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Hotel Tivoli, Ancon, C. Z., on Sunday, May 14, 1911, at 7.30 p. m. The program follows:

1 March—*Jolly Pals*........................Kohn
2 Selection—*The Prince of Pilsen*...........Luders
3 Reverie—*Traumerei* (By request)........Shuman
4 Overture—*Zampa*.........................Herold
5 Valse tres lente—*Amoreuse*...............Berger
6 Medley Selection—*Southern Plantation Songs*...........................Conterno
7 Two Step—*Wild Cherries*..................Snyder
8 Serenade—*La Paloma* (By request)......Xradier
9 Intermezzo—*Elegante from Les Contes d' Hoffman* (By request)..........Offenbach
10 March—*Independentia*......................Hall

CHAS. E. JENNINGS, *Musical Director.*

The next concert will be given at Empire on Sunday, May 21, 1911, at 6 p. m.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, May 6, 1911. All heights are in feet above mean sea level.

DAY AND DATE.	STATION.				
	Vigia.	Alhajuala	Gamboa.	Bohio.	Gatun Lake.
Sun. April 30...	130.7	95.8	48.0	13.8	13.8
Mon. May 1...	128.4	94.1	48.3	14.1	14.0
Tues. May 2...	127.9	94.2	46.9	14.0	14.0
Wed. May 3...	127.6	94.0	46.8	[illegible]	14.0
Thurs. May 4..	129.7	95.3	48.0	14.[illegible]	14.0
Fri. May 5.....	128.3	94.9	48.0	14.4	14.2
Sat. May 6....	130.0	95.4	46.8	14.4	14.3
Height of low water.......	125.0	92.0	44.0		

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

COROZAL.

A "social" was held at the clubhouse on Thursday evening. The program consisted of piano duets, vocal solos, singing by a male quartet, Indian club swinging, and the Corozal chorus appeard for the first time in concert. The refreshments were home made cake and lemonade.

A sacred concert will be given on Sunday evening, May 14, in the clubhouse. The chorus is composed of 17 voices. Programs are now being printed and will be distributed later. The Rev. A. A. Nellis will give a short address.

CULEBRA.

The Gorgona indoor baseball team defeated the Culebra team on the local floor on Saturday by a score of 14 to 8. Batteries: Gorgona—Weiser and Christenson; Culebra—Koperski and Cushing.

On Tuesday, May 2, C. H. Wilson engaged in a simultaneous chess match with seven Culebra players and succeeded in winning all.

The latest moves in the chess game "by wireless," between Porto Bello and Culebra are, as follows:

White. Porto Bello.		Black. Culebra.	
12.	K R—K Sq	12.	P—Q B3
13.	P—Q R4	13.	Q—B3
14.	Kt—K4	14.	P—K R3

The Boy Scouts went to Cruces on Sunday afternoon.

Arrangements are being made for a pool tournament. All interested should hand their names to J. T. Silver.

EMPIRE.

Cristobal took two out of three duckpin games from the Empire team on Saturday, May 6. Following was the score:

Empire.				Cristobal.			
Gustavson...	91	88	98	Smith.....	86	90	91
Potter......	112	87	86	Jacques...	79	84	90
Gorham....	99	80	78	DeCora...	80	89	86
Pearson.....	80	93	94	Sullivan...	101	82	88
Huson......	70	87	88	Herring...	82	99	90
Total.....	452	435	444	Total..	428	444	445

The following high scores were bowled during the past week: Duckpins—Reiman, 103; Gustavson, 107; Pinney, 109; Rodeghiero, 102, 105; Green, 101; Clark, 106; Gorham, 122, 100, 109, 102, 101; Huson, 102; Deakin, 104; Scheets, 109; Pearson, 100; Davis, 101; Bigpins—Myers, 215; Peterson, 212; King, 208; Parkis, 244, 227, 216, 203, 202, 201, 200.

Empire and Gatun will play indoor baseball on Saturday evening, May 13.

Residents of Empire who wish to become members of a conversational class in Spanish are invited to hand their names to the secretary.

GORGONA.

On Wednesday night at 7.30, E. A. Howe will lead the discussion club; his topic will be "It is easier to do right than wrong." All men are invited.

The following men lead in duckpins for the week ending May 6: Dunlop, 89; Haggerty, 86; Seebt, 85; Schofield, 84. The following men lead in high averages for bigpins during the same period: Arnold, 161; Haggerty, 161; Bordt, 157; Stoehr, 151; R. Varenkamp, 151.

CRISTOBAL.

The standing of the duckpin league at present is, as follows:

Team.	Won.	Lost.	Per cent
Cristobal....................	14	4	.777
Culebra......................	9	9	.500
Gorgona.....................	9	9	.500
Empire.......................	8	10	.444
Gatun........................	8	16	.333

Cristobal won three straight games in the duckpin league series at Cristobal on Saturday night, by the following scores:

Empire.				Cristobal.			
Davis......	89	89	98	Barrett....	97	103	98
Pinney.....	85	80	88	Howard...	100	89	80
Shaughnessy.	82	89	78	Herrington.	106	98	96
Giavelli.....	82	87	70	Furlong...	89	96	86
Rodeghiero..	81	90	109	Rosteck...	80	86	85
Total.....	419	435	443	Total..	472	472	445

Empire won the indoor baseball game in the league series at Cristobal on Saturday night, by the score of 27 to 10. Young and Mullane were the battery for Empire; Russell and McSparren for Cristobal.

Moving pictures will be shown on Friday night, May 12.

The subject for debate on Wednesday night was "Resolved that the resignation of President Diaz of Mexico would be for the best interests of that country." Ware and Yeiser debated for the negative, and Weaver Goodman for the affirmative; the affirmative won. The subject for May 10 will be "Resolved that the Panama Canal should not be fortified." The program committee, with Mr. Weatherbee, as chairman, has planned interesting meetings for June.

A new type of Cristobal pennant has been put on sale.

A new Columbia graphanola has been ordered for Cristobal, and until it arrives a temporary machine is in use.

On Monday night, May 8, a match game of indoor baseball was played between the regular team and a team of ex-stars of the diamond.

A local basketball league will be started next week. Five teams, captained by Weller, Sartor, Luce, Prather and Vifquain, numbering about 40 men, will play. Regular scheduled games will be played on Tuesday and Thursday nights.

Forty new library books will be placed on the shelves this week.

GATUN.

At the "smoker" on May 3, Franklin Matthews told of several incidents in his work as a news correspondent. Others who participated were: Alfred B. Dickson, piano selections; E. Emery Black, face sketches; J. Williamson, humorous monologue and song; R. E. Chatfield, slack wire and fancy balancing acts; W. C. Ross, tenor solos; Alonzo Stevenson, original poetry; M. Meeks, burnt-cork jokes; Huber and Wilson, wrestling match. During intermission, lunch and cigars were served. Two hundred men were present.

Gatun lost two out of three games of duckpins in the game with Gorgona on Saturday night, May 6.

The score of the indoor baseball game played at Gatun on May 6 was: Gatun, 30; Corozal, 15.

On account of the band concert, the "Life problem" club did not meet on May 7. The subject "The Church and the Y. M. C. A." will be discussed on May 14.

Among the events for the latter part of May are Prof. Hellerman in "A night of magic and mirth," and the Gatun high school entertainment.

A "smoker" and reception will be given in the near future in honor of the employes of the McClintic-Marshall Company.

Louis DePoorter made a run of 90 balls in a pool game on Wednesday evening, May 3.

Gatun pennants will be given to the bowlers who secure the highest scores for a single game in duckpins and tenpins during the month of May.

PORTO BELLO.

The local chess tournament for the period, April 6 to May 4, closed with the following standing:

Name.	Played	Won	Per cent
Morgan......................	15	13½	.900
Hanbury....................	12	10½	.875
Tuttle.......................	13	11	.846
Capt. Stickle................	7	5	.714
Honer.......................	8	5	.625
Nemec......................	12	7	.583
Arden.......................	11	5½	.500
Cornelison..................	5½	2½	.500
Hill..........................	12	6	.500
Mackintosh.................	15	7½	.500
Mitchell.....................	12	5	.385
Colberg.....................	14	4½	.321
Everett......................	14	4	.286
McDevitt....................	13	3	.231
Corrigan....................	12	1	.083
Rogers......................	14	1	.071

The members having the four highest standings will play simultaneous games with the club during the month of May. Mr. Morgan played his games on May 4, and won 7½ from his 13 opponents.

April Rainfall for Three Years.

Station.	1909	1910	1911	Station Average	Years of Record	Rai'y days 1910
Pacific Section—	*Ins.*	*Ins.*	*Ins.*	*Ins.*		
Ancon......	2.92	3.71	6.34	2.77	13	17
Balboa......	2.83	3.63	7.39	4.19	13	19
Miraflores...	2.30	5.15	2.86	3.44	3	12
Pedro Miguel	2.32	5.16	5.24	3.47	4	11
Rio Grande..	2.63	5.36	6.86	3.59	7	14
Central Section—						
Culebra.....	2.56	5.35	4.89	3.83	21	14
Camacho....	2.64	6.92	6.98	3.74	5	12
Empire.....	3.33	4.24	3.93	3.69	7	14
Gamboa....	5.55	3.85	4.01	3.63	30	16
Alhajuela...	3.54	2.99	4.88	3 47	12	13
El Vigia....	2.32	2.33	3.40	2.68	3	14
Gorgona....	......	5.79	3.16	3.18	7	11
San Pablo...	5.50	6.52	3.82	4.81	4	16
Tabernilla...	6.30	6.29	4.66	4.90	4	18
Bohio.......	7.23	6.46	4.87	5.78	17	20
Trinidad....	6.96	9.28	3.33	5.74	4	20
Monte Lirio.	7.18	7.01	5.27	5.77	4	24
Atlantic Section—						
Gatun......	4.03	4.97	6.38	3.83	7	24
Brazos Brook	6.23	5.59	3.90	3.62	5	24
Cristobal....	3.56	3.30	3.06	4.16	41	21
Porto Bello..	12.56	7.14	6.60	8.07	4	22
Nombre de D.	12.58	......	5.87	9.22	2	24

OFFICIAL CIRCULARS.

Charges for Electric Current.

CULEBRA, C. Z., April 28, 1911.

CIRCULAR NO. 336-B CORRECTED:

Effective May 1, and until further notice, the charges for electric light and current furnished by the Mechanical Division to all departments and divisions, including the Panama Railroad Company, will be as follows:

Per month for each 16 c. p. lamp.........	$.40
Per kilowatt hour for power and lights on meter basis, where the Mechanical Division does not furnish lamp renewals.....	$.02½

Other rates fixed by Circular No. 336-A of December 30, 1910, or as specially authorized as an exception thereto since that date, will remain in effect.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Shop Expense Percentage.

CULEBRA, C. Z., May 5, 1911.

HEADS OF DEPARTMENTS AND DIVISIONS.

In accordance with the provisions of Circular No, 169-E, the following shop expense percentage for each shop is hereby fixed effective May 1, 1911, and will be applied, until further orders, to the distributed labor used in all shop work, in accordance with the provisions of Circular No. 264-A, viz:

DIVISION OR SHOP.	Shop expense percentum.
Mechanical Division................	37.5
Empire shop.........................	40
Dry Dock shop......................	45
Balboa shop.........................	30
Porto Bello shop....................	25

Circular letter from this office dated January 6, 1911, is revoked.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Cost of Patterns.

CULEBRA, C. Z., May 6, 1911.

HEADS OF DEPARTMENTS AND DIVISIONS:

Effective July 1, 1911, the cost of patterns will be charged directly to the job, instead of to the foundry account.

All iron castings, except counterweights for spillway and locks, will be billed at the flat rate of three cents per pound.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Requests for Telephone Work.

CULEBRA, C. Z., May 1, 1911.

HEADS OF DEPARTMENTS AND DIVISIONS:

Referring to my circular letter of March 23, 1911, concerning work requests on Form 159 C. E.–Revised. It will be necessary in future to furnish only seven copies of requests for the installation, removal, or repair of telephones, instead of nine copies, as heretofore.

C. A. MCILVAINE, *Chief Clerk.*

Rainfall from May 1 to 6, 1911, Inclusive.

STATIONS.	Maximum in one day	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon........................	.12	2	.18
Balboa.......................	.22	2	.29
*Miraflores..................	1.04	4	1.70
Pedro Miguel................	.08	4	.19
Rio Grande..................	1.08	3	2.24
Central Section—			
Culebra......................	1.19	3	1.91
*Camacho....................	.52	3	1.58
Empire.......................	.54	3	1.08
Gamboa......................	.98	5	2.03
*Juan Mina..................	1.26	3	3.46
Alhajuela....................	1.71	5	4.83
*El Vigia.....................	1.39	2	4.60
*Gorgona....................	2.98	5	3.24
San Pablo....................	2.08	5	2.35
Tabernilla...................	2.84	5	3.89
Bohio........................	.74	5	1.78
*Monte Lirio.................	3.05	5	4.06
Atlantic Section—			
Gatun........................	.97	2	2.48
*Brazos Brook...............	1.69	1	5.23
Cristobal....................	2.44	6	4.58
Porto Bello..................	5.14	2	†5.85

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

†To 5 p. m., May 5.

Married.

WATSON–DOWNES—At Pedro Miguel, on May 6, Miss Olive Clark Downes to Roy Russell Watson, the Rev. Carl H. Elliott officiating. Canal Zone residence, Cristobal

COMMISSARY DEPARTMENT.

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning May 11.

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	6
Shoulder, neck trimmed off, (4 pounds and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg, (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing, per pound	10
Shoulder, for roasting (not under 4 pounds), per pound	12½
Chops—Shoulder, per pound	16
Chops, per pound	24
Loin for roasting, per pound	24
Cutlets, per pound	28
Pork—Loin chops or roast, per pound	14
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	8
Corned, per pound	12, 14, 16
Chuck roast (3 pounds and over), per pound	12
Pot roast, per pound	12½
Rib roast, second cut (not under 3½ pounds), per pound	16
Rib roast, first cut (not under 3 pounds), per pound	18
Sirloin roast, per pound	19
Rump roast, per pound	19
Porterhouse roast, per pound	20
Steak, chuck, per pound	12½
Round, per pound	13
Rib, per pound	18
Sirloin, per pound	19
Rump, per pound	19
Porterhouse (not less than 1½ pounds), per pound	20
Tenderloin (Western) per pound	24

MISCELLANEOUS.

Caviare, Russian, per tin	47, 89
Livers—Beef, per pound	7
Calf, each	60
Half, each	30
Sausage—Pork, per pound	†17
Bologna, per pound	10
Frankfurter, per pound	12
Lieberwurst, per pound	10
Fancy Devonshire Farm, per pound	18
Sweetbread —Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	23
½-dozen, only	12
Bluefish, fresh, per pound	14
Halibut, fresh, per pound	15

POULTRY AND GAME.

Chickens—Fancy roasting, milk fed, large, each	1.25
Fancy roasting, milk fed, med., each	1.00
Fancy roasting, corn fed, about 4½ pounds, each	90
Fowls, each 60, 70, 80, 90,	1.00
Ducks, Western, about 4½ pounds, each	1.00
Long Island, each	1.30
Ducks, Long Island, each	1.10
Broilers,, milk fed, each	60
corn fed, each	55
Turkeys, per pound	26
Squabs, each	35
Capons	2.10
Rabbits, dressed, each	40
Pheasants, each	50
Partridges, each	50
Grouse, each	50

CURED AND PICKLED MEATS.

Ham—German, Westphalia, per pound	36
Sugar cured, per pound	18
Sliced, per pound	20
Half, for boiling, per pound	19
Boiled, per pound	*22
Hocks, per pound	18
Picnic, Winchester, per pound	15
Bacon—Breakfast, whole piece, per pound	*22
Breakfast, sliced, per pound	*23
Beef, salt, family, per pound	9½
Pork, salt family, per pound	14
Ox Tongues each	75
Pigs' feet, per pound	9
Tongues, per pound	14
Sliced bacon in 1-pound tins, per tin	30
In 1-pound jars, per jar	30

DAIRY PRODUCTS.

	Price.
Butter—Creamery special, per pound	32
Cheese—Roquefort, per pound	38
Philadelphia cream, small cake	10
large cake	18
Young America, per pound	18
Cheese—Swiss, per pound	26
Edam, each	1.00
Camembert, in small tins, tin	14
Neufchatel, cake	6
Gouda, per pound	34
Milk (Inspected or certified), per bottle	**25
(Pasteurized), bottle	**18
Buttermilk, bottle	**15
Ice cream, quart	‡25
½-gallon	‡50

VEGETABLES AND FRUITS.

Beets, per pound	3
Celery, per head	8
Carrots, per pound	3
Cabbage, per pound	2
Cucumbers, per pound	10
Egg plant, per pound	†10
Lettuce, per pound	10
Onions, per pound	5
Potatoes, white, per pound	2½
sweet, per pound	2
Parsnips per pound	3
Peppers green, per pound	10
Rhubarb, per pound	5
Spinach, per pound	6
Squash, per pound	6
Tomatoes, per pound	6
Turnips, per pound	3
Yams, per pound	3
Apples, fancy table, per pound	10
Grapefruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12
Pineapples, each	20
Pears, per pound	10

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*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending May 17, 1911 (75th meridian time):

DATE.	Low.	High.	Low.	High.	Low.
	A. M.	A.M.	A. M.	P. M.	P M.
May 11	......	2.45	8.45	2.55	9.10
May 12	......	3.27	9.29	3.33	9.50
May 13	......	4.05	10.10	4.10	10.28
May 14	......	4.40	10.45	4.44	11.05
May 15	......	5.12	11.22	5.17	11.40
May 16	......	5.45	11.58	5.50	......
			P. M.		
May 17	12.14	6.18	12.32	6.22	......

Sale of Public Buildings.

OFFICE OF CHIEF QUARTERMASTER.
ISTHMIAN CANAL COMMISSION.
CULEBRA, C. Z., May 1, 1911.

Sealed proposals for the purchase of any or all of one hundred and forty-three (143) buildings located along the line of the Panama Railroad Company, between Bohio and Cartagenita, will be received here until 3 p. m., Monday, May 15, 1911, and then opened. Information furnished on application to district quartermasters, or to this office. Envelopes containing proposals should be endorsed "Proposals for the purchase of buildings," and addressed to Lieut.-Col. C. A. Devol, Chief Quartermaster, Culebra, C. Z.

Lease of Lots in Colon.

Sealed bids will be received up to 5.30 p. m., Wednesday, May 31, 1911 for lease to the highest bidder of lots in the newly filled section of Colon as shown on plans which may be seen at the Land Office in Colon and at the Land Office in Panama.

These sealed bids must be addressed to the General Superintendent of the Panama Railroad Company, Colon, and must be plainly marked on the outside of the envelope "Proposal for lot No. ——, block No. ——, Colon." Bids not marked in this manner will not be considered.

The minimum rental to be accepted for these lots may be ascertained by applying to either one of the above mentioned Land Offices.

Persons holding options on any lots in this district and having paid rental up to June 30, 1910, will have the privilege of taking the lot at the highest rate offered.

The lots to be leased are those on the west side of E street between 2d street and 14th street, and that district on the east side of E street bounded by 2d street on the north, 9th street on the south, E street on the west and G street on the east.

Those lots on the west side of E street will be available for building on or about June 1, 1911; the balance of the lots will not be available for building before October 1, 1911.

Parties submitting bids must state character and purpose of building they intend to erect, and must indicate period of time in which they expect to commence construction after assignment.

Application blanks may be obtained at the Land Office in Colon and Panama.

All rental is to be paid quarterly in advance.

The Panama Railroad Company reserves the right to reject any or all bids.

J. A. SMITH,
General Superintendent.

Colon, R. P., April 22, 1911.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Panama	P. R. R.	Saturday	May 6
Advance	P. R. R.	Friday	May 12
Colon	P. R. R.	Thursday	May 18
Allianca	P. R. R.	Wednesday	May 24
Panama	P. R. R.	Wednesday	May 31
Advance	P. R. R.	Tuesday	June 6
Colon	P. R. R.	Monday	June 12
Allianca	P. R. R.	Saturday	June 17
Panama	P. R. R.	Saturday	June 24
Advance	P. R. R.	Friday	June 30
Colon	P. R. R.	Friday	July 7

CRISTOBAL TO NEW YORK.

Ancon	P. R. R.	Wednesday	May 10
Allianca	P. R. R.	Friday	May 12
Panama	P. R. R.	Thursday	May 18
Advance	P. R. R.	Wednesday	May 24
Colon	P. R. R.	Wednesday	May 31
Allianca	P. R. R.	Tuesday	June 6
Panama	P. R. R.	Tuesday	June 13
Advance	P. R. R.	Sunday	June 18
Colon	P. R. R.	Saturday	June 24
Allianca	P. R. R.	Friday	June 30
Panama	P. R. R.	Thursday	July 6
Advance	P. R. R.	Wednesday	July 12
Colon	P. R. R.	Wednesday	July 19

NEW YORK TO COLON.

Almirante	U. F. C.	Thursday	May 4
Prinz Aug. Wilhelm	H.-A.	Saturday	May 6
Santa Marta	U. F. C.	Thursday	May 11
Prinz Sigismund	H.-A.	Saturday	May 13
Thames	R. M.	Saturday	May 13
Metapan	U. F. C.	Thursday	May 18
Prinz Joachim	H.-A.	Saturday	May 20
Zacapa	U. F. C.	Thursday	May 25
Prinz Eitel Friedrich	H.-A.	Saturday	May 27
Trent	R. M.	Saturday	May 27
Almirante	U. F. C.	Thursday	June 1
Prinz Aug. Wilhelm	H.-A.	Saturday	June 3

COLON TO NEW YORK.

Zacapa	U. F. C.	Thursday	May 11
Prinz Eitel Friedrich	H.-A.	Monday	May 15
Trent	R. M.	Tuesday	May 16
Almirante	U. F. C.	Thursday	May 18
Prinz Aug. Wilhelm	H.-A.	Tuesday	May 23
Santa Marta	U. F. C.	Thursday	May 25
Prinz Sigismund	H.-A.	Monday	May 29
Oruba	R. M.	Tuesday	May 30
Metapan	U. F. C.	Thursday	June 1
Prinz Sigismund	H.-A.	Monday	June 5
Zacapa	U. F. C.	Thursday	June 8
Prinz Joachim	H.-A.	Monday	June 12

NEW ORLEANS TO COLON.

Abangarez	U. F. C.	Saturday	May 6
Heredia	U. F. C.	Wednesday	May 10
Atenas	U. F. C.	Saturday	May 13
Cartago	U. F. C.	Wednesday	May 17
Turrialba	U. F. C.	Saturday	May 20
Parismina	U. F. C.	Wednesday	May 24
Abangarez	U. F. C.	Saturday	May 27
Heredia	U. F. C.	Wednesday	May 31
Atenas	U. F. C.	Saturday	June 3

COLON TO NEW ORLEANS.

Turrialba	U. F. C.	Thursday	May 11
Parismina†	U. F. C.	Thursday	May 11
Abangarez	U. F. C.	Thursday	May 18
Heredia†	U. F. C.	Thursday	May 18
Atenas	U. F. C.	Thursday	May 25
Cartago†	U. F. C.	Thursday	May 25
Turrialba	U. F. C.	Thursday	June 1
Parismina†	U. F. C.	Thursday	June 1
Abangarez	U. F. C.	Thursday	June 8
Heredia†	U. F. C.	Thursday	June 8

Hamburg-American steamers leave Colon for New York via Kingston and Santiago, Cuba at 10 a. m.

A local run from Colon to Bocas del Toro and Port Limon will be made on Wednesday May 17 and 31; June 14 and 28.

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships designated (†) for New Orleans via Port Limon and Puerto Barrios on Thursday at 4 p. m.; ships for New York via Kingston on Thursday at 11 a. m.; for Bocas del Toro on Monday at 6 p. m.

The Leyland line steamer *Jamaican* sails for New Orleans, via Port Limon, Costa Rica, on or about May 22.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, MAY 17, 1911. No. 38.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Effect of Heavy Rain in Culebra Cut.

The heavy rain of May 11—2.57 inches—caused considerable inconvenience in Culebra Cut from noon of that day until the afternoon of the day following. The drainage ditch at the south end of the Cut, which carries water through the culvert under the old P. R. R. embankment west of the locks at Pedro Miguel, so that it may flow around the lock site, broke, and allowed the water to empty into the steam shovel cut which is being made to provide drainage through the center wall culvert of the locks. A battery of two 10-inch, and one 15-inch, centrifugal pumps, which had been installed in the new drainage ditch to take care of such water as might collect from rains, was flooded, and the pumps were forced to suspend temporarily. This new drainage ditch will be subject to similar inundations until it is completed to the culvert of the locks, that is, until the water from the south half of the Cut may drain through the locks at Pedro Miguel.

All the steam shovels south of the summit are working with the end in view of keeping open the central drainage ditch. Last year the slides at Culebra forced the bottom of the Canal up and closed this ditch, and it was necessary to maintain pumps in order to keep the water down in the Cut. Pumping is neither so economical nor so effective as gravity drainage.

North of the summit, the central drainage ditch has a slight grade from Las Cascadas to the sump at Gamboa, due to the fact that the excavation is so near to its ultimate depth in this section. The water drains off slowly, and, because of this, several steam shovels in the Empire district were obliged to suspend on May 11, due to the accumulation of water in the pits in which they were working.

At Culebra, on May 11, a portion of the west bank gave way, and one steam shovel was nearly overturned and obliged to suspend work. The portion that slipped was a ledge of lava rock about 40 feet above the level on which the shovel was digging, which was at a point where the bank seems uncommonly firm. The ledge of lava on top of this bank became watersoaked and gave way, tumbling over the firm bank into the Cut. On the east bank of the Cut at Las Cascadas, a mud slide was accelerated by the rains, and the track leading to two steam shovels was put temporarily out of service. This slide, although difficult to handle on account of its nature, viz., soft mud, now contains only a few thousand cubic yards of material.

Eleven shovels in all were forced to suspend work for part of the day on the 11th, on account of flooded pits, or covered tracks.

Land Office.

The land office authorized under the Executive Order of January 19, 1911, to be conducted under the Law Department, has been opened in Ancon, with A. A. Greenman, formerly land agent for the Panama Railroad Company, in charge. He is assisted by one clerk and a land inspector on the gold roll, and by two clerks on the silver roll. The land business of the Panama Railroad Company and Isthmian Canal Commission will be conducted through this office, but the payment of rent for Panama railroad lands will be continued, as heretofore, at the office of the General Superintendent at Colon, or at such places as he may direct. The payment of rent on Commission land will be made, as heretofore, to the district tax collectors.

Observation Car for Visitors.

Requisition has been placed in the States for a 50-passenger observation motor car for operation over the main line of the Panama railroad, and the Canal construction tracks, which will be supplied on bid. It will be of steel construction, with a length over all of between 50 and 60 feet, and a maximum width of 10 feet. The engine and motor are to be capable of driving the car, fully loaded, either forward or backward, over the main line at a speed of 45 miles an hour on level track, and with a running start up a five per cent grade, 1,000 feet long, at a speed of not less than 10 miles an hour. Instead of the solid roof usually provided with this type of car, one with a ventilating deck, containing side sashes, has been asked for. The interior finish is to be in mahogany; the head linings of sheet steel enameled and neatly striped; the windows to be large and to open as high as possible. The seats are to have reversible backs, with rattan covered back and seat cushions, and mahogany arm rests. An observation platform, 14 feet long, provided with suitable windows to afford protection from rain when running backward, will be installed at the rear end of the car. The motor equipment is to consist of a 6-cylinder, 4-cycle, water cooled engine, equipped with both high extension Bosch magneto, and storage battery ignition, and mechanically operated valves. The lighting will be either by means of a storage electric battery, or with acetylene gas stored in cylinders furnished from the Commission plant. The body of the car will be painted a chrome yellow, and the running gear green.

Engineering Changes.

On May 10, 1911, the engineering department of the Central Division was reorganized. Heretofore, the field and office work has been handled by the resident engineer at Empire, with offices in charge of assistant engineers at Paraiso and Las Cascadas. These two offices have been abolished, and the field and office work heretofore handled in them has been centralized in the Division Engineer's office at Empire, from which point all engineering work in the Central Division will be handled in future, under the jurisdiction of the resident engineer and one assistant engineer.

In making these changes, Assistant Engineer William L. Thompson, formerly in charge of the office at Las Cascadas, has been transferred to the Pacific Division, where he has been placed on work in connection with hydraulic operations below Miraflores Locks. Assistant Engineer Mark W. Tenney, formerly in charge of the Paraiso office, has been transferred to the office of the resident engineer at Empire.

Reservoirs Filling.

The copious rains that have fallen over the Canal Zone watersheds during the past 10 days have had the effect of causing a rise in all of the reservoirs, and of allaying any apprehension that may have been felt regarding a scarcity of water. The greatest rise reported up to May 13 was in the Rio Grande reservoir. The low record of the year at that point was on May 8, when the elevation of the water above sea level stood at 223.38 feet. On May 12, the water elevation had increased to 227.10, or 3.72 feet within a period of five days. About two and one-half feet of this rise came from the heavy rain in the afternoon of May 11. At 5 p. m. on May 14, the reservoir had filled to 229.89, or $6\frac{1}{2}$ feet above the low point. The low point in this reservoir in 1910 was on May 1, when the water elevation was 223.97 feet.

The low point in the Camacho reservoir, which supplies water to Empire and vicinity, was also reached on May 8, when the surface elevation was 341.9 feet above sea level. There has been a greater demand on the storage supply in this reservoir during the past dry season than for the same period in 1910, when the lowest point reached was 349.7 feet on July 12. The recent rains have augmented the supply, and on May 12, the

NOTES OF PROGRESS.

(*Continued.*)

surface elevation stood at 344.5, a gain of two and one-half feet. The Caribali reservoir at Gorgona is also filling. The low point this year was 70.3 feet on May 4, as compared with 76.0 feet on March 23, 1910. The water elevation on May 12 stood at 72.2 feet, a gain of 1.9 feet.

Some heavy showers have fallen on the Atlantic slope since May 1, the total precipitation at Cristobal from the 1st to the 14th being 6.43 inches, and at Brazos Brook, 9.76 inches. These, apparently, were not well distributed over the Brazos Brook watershed, as the elevation in the reservoir, which supplies water to Colon, Cristobal, and Mount Hope, on May 12 was only 37.5 feet, a rise of six inches from the low point of the year, viz., 37 feet, which was reached on May 8. The low point at this reservoir in 1910 was 41.8 feet above sea level on May 9.

The Agua Clara reservoir at Gatun was not in service at the beginning of the rainy season last year. The low point in the supply was reached on May 7, when the surface elevation stood at 56 feet. On May 12, it had risen to 56.5 feet.

Gatun Dam Spillway.

The concrete work in the spillway of Gatun Dam is over 60 per cent completed, 135,211 cubic yards, out of a total of 225,000, having been placed at the close of work on May 13. A statement of the amount laid each day last week, and of the total in place, follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
May 8	94	6:00	2
May 9	36	3:00	1
May 10	132	6:00	1
May 11	84	2:00	1
May 12	112	6:00	1
May 13	96	5:30	1
Total	554	28:30	1.17
Previously reported	134,657		
Grand total	135,211		

The Lirio planing mill between Culebra and Empire was shut down in the latter part of April. The machinery is being removed to Gorgona shops.

Building Notes.

The concrete block plant at Ancon, which has been shut down for the past year or two, will possibly be operated again shortly to furnish the hollow concrete blocks of which the new fire station at Cristobal will be built.

The dismantling of the annex to the Culebra hotel is under way, and plans have been made for the removal of a number of other buildings which are in danger of becoming involved in the slide on the west bank. Three houses, one a type-5, and the others, type-18 quarters, will be taken down and moved to Corozal so that they can be used either as bachelor, or nonhousekeeping married quarters. They will probably be situated east of the railroad track.

The Culebra post-office will probably be moved to a site near the commissary, between the cinder path and the roadway. The fire station, which has already been carried about 12 inches out of line by the ground movement, may be relocated south of the Administration building. The site of the time office of the Central Division will probably be changed to north of the railroad station.

The buildings destroyed in the fire at Colon on March 23 are rapidly being replaced, about 15 having been erected to date, all of them of frame construction. Work on a new and larger schoolhouse for colored children, to replace the one burned, has been begun. It will be a one-story, four-room building, 51 by 62 feet, situated on the Mount Hope road, a little south of the former site, and will be constructed of lumber taken from two laborers' barracks at Tabernilla. The Salvation Army rest hall will probably be rebuilt by the Commission on a site about 1,500 feet south of its former location.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Over 64 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of work on May 13, being 1,338,957 cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending May 13, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers.		
	Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
May 8	1,790	27:10	8	676	8:40	2	172½	2,638½
May 9	2,120	32:58	6	720	9:40	2	262¾	3,102¾
May 10	2,054	33:04	6	512	9:00	2	178	2,744
May 11	2,156	33:35	6	680	8:40	2	132	2,968
May 12	2,458	37:24	6	592	8:40	2	194½	3,244½
May 13	1,946	32:50	6	728	9:10	2	120½	2,794½
*Portable mixers	....	....	......	353½	....	......	....	353½
Total	12,524	197:01	6.33	4,261½	53:50	2	1,060	17,845½
Previously reported	....	....	......	....	....	......	....	1,321,111½
Grand total	....	....	......	....	....	......	....	1,338,957

*The 353½ yards shown for the portable mixers are reinforced concrete, and were placed on the following days: May 8th, 46 yards; May 9th, 79½ yards; May 10th, 66 yards; May 11th, 58 yards; May 12th, 54½ yards; May 13th, 49½ yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is over 77 per cent completed, 647,628 cubic yards, out of a total of 837,400, having been placed at the close of work on May 13. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-Cubic yard mixers			AUXILIARY PLANT.						Large stone.	Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete Placed.	Hours worked	No. of mixers		
	Cu. Yds.			Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
May 8	250	6:00	2	568	11:00	2	133	11:00	2	....	951
May 9	572	10:00	2	320	5:50	1	78	5:50	1	....	970
May 10	336	6:00	2	410	9:75	2	....	....	......	....	746
May 11	382	8:00	2	632	12:50	2	....	....	......	....	1,014
May 12	498	10:00	2	420	7:00	1	80	5:00	1	....	998
May 13	364	8:00	2	350	5:00	1	53	4:00	1	....	767
Total	2,402	48:00	2	2,700	50:75	1.5	344	25:50	.83	....	5,446
Previously reported	....	....	......	....	....	......	....	....	......	4,187	642,182
Grand total	....	....	......	....	....	......	....	....	......	4,187	647,628

MIRAFLORES LOCKS.

Over 17 per cent of the concrete for the system of two twin locks at Miraflores was in place on May 13, the total amount on that date being 234,636 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT.							Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
May 8	1,240	22:25	4	112	2:83	2	378	20:75	4	....	1,773
May 9	1,246	21:67	4	204	4:00	2	167	9:50	2	....	1,693
May 10	1,278	21:50	4	148	3:17	2	271	16:00	3	....	1,740
May 11	1,332	22:25	4	228	4:00	2	374	21:00	3	....	1,993
May 12	1,152	20:17	4	100	2:00	2	355	23:00	3	....	1,645
May 13	1,064	17:92	4	120	2:00	2	164	13:00	2	....	1,411
	....	....	......	....	....	......	*322	36:00	1	....	....
Total	7,312	125:76	4	912	18:00	2	2,031	139:25	2.57	....	10,255
Previously reported	....	....	......	....	....	......	....	....	......	3,693	224,381
Grand total	....	....	......	....	....	......	....	....	......	3,693	234,636

*The 322 yards were mixed by a ½-yard mixer, the amounts for each day being: May 8th, 43 yards; May 9th 76 yards; May 10th, 43 yards; May 11th, 59 yards; May 12th, 38 yards; May 13th, 63 yards.

SOCIAL LIFE OF THE ZONE.

Women's Clubs.

At the meeting of the executive board of the Canal Zone Federation of Women's Clubs held at Cristobal on May 8, a committee on the year book was appointed, composed of the outgoing and incoming corresponding secretaries, the recording secretary, and the treasurer. The book will be issued as soon as possible, and will contain a review of the work and meetings of the Federation for the year 1910-11, with the revised by-laws, and greetings from the new officers. Mrs. A. O. Herman was appointed Federation librarian. She will have the charge of the Federation libraries, and will arrange for their exchange among the schools for the use of the pupils. She will also have charge of the Federation pictures and art library. Communications regarding any of these matters should be addressed to Mrs. Herman at Gorgona. The executive board will not meet again until October.

The Gatun Woman's Club has under consideration a course of study work for the next year. The meetings will continue weekly at the clubhouse for the present.

At the meeting of the Empire club on May 18, the guest of honor will be Mrs. Thomas E. Brown, Jr. The meeting will be held at the clubhouse.

At the meeting of the Paraiso Woman's Club on May 24, the members of the Empire Woman's Club, the teachers of the Paraiso schools, and the pupils of the upper grade will be entertained. There will be an exhibit of the Federation pictures, with an address. This meeting will close the club season which will reopen in September.

The Pedro Miguel Woman's Club held an election of officers in April, when the following were chosen: President, Mrs. George Brown; vice-president, Mrs. H. Girdner; secretary, Mrs. W. T. Piper; treasurer, Mrs. Mark White. The social meeting will be held at the home of the treasurer on May 24.

Church Notes.

The Wednesday evening services at St. Luke's Church, Ancon, have been discontinued. The litany is read on Wednesday and Friday mornings at 9 o'clock.

The annual meeting of the Juvenile Missionary Society of the United Methodist Church was held on Sunday evening, May 14, at the mission rooms, which are situated on the border between the Canal Zone and Panama city. This society is composed of young West Indian men and women. The Rev. C. M. Anderson is in charge.

Miscellaneous Events.

The University Club will give a dance, with German figures, at its clubhouse in Panama, on the night of May 20.

The corner stone of the new Masonic temple, to be erected on the corner of Eleventh and Bolivar streets, Colon, will be laid with appropriate ceremonies on Decoration Day, May 30.

Lawn Tennis.

The following is the result of the tennis tournament in singles held at the Cristobal-Colon courts on May 7:

First round—Farquharson, Colon, defeated Tupper, Culebra, 6-2, 6-1; Bartholomew, Empire, defeated Wells, Gatun, 6-4, 6-3; McMurdo, Ancon, defeated Guptil, Cristobal, 6-4, 6-2; Hunter, Tivoli, defeated Deane, Panama, 6-3, 6-3.

Semifinals—Bartholomew defeated Farquharson, 6-3, 6-1; McMurdo defeated Hunter, 6-2, 6-4.

Finals—Bartholomew defeated McMurdo, 6-2, 2-1, and default.

Corozal, Gorgona and the Marine Corps clubs failed to report for the tournament.

The next tournament will be in doubles at the Tivoli courts, Ancon, near the hospital gate, on May 30. Play will begin at 9 a. m.

Reunion of Employes.

All employes on the Isthmus, formerly in the Supervising Architect's and Master Builder's Departments, will please send full name and address to the undersigned, for the purpose of arranging a reunion banquet.

MAX HERZ.

Mount Hope, C. Z., May 16, 1911.

Red Cross Finances.

The financial condition of the Canal Zone Chapter, American National Red Cross, on May 1 was, as follows:

RECEIPTS.		
April 1. Balance on hand	$2,827.24	
April 5. From Panama Government, account Colon fire	5,000.00	
April 5. From Colonial Musical Association for relief of sufferers, Colon fire	7.50	
April 6. From Cristobal Y. M. C. A., account Colon fire	146.00	
April 11. Proceeds of benefit ball game, Cristobal, account Colon fire	708.15	
April 17. From Gorgona section, for endowment fund	55.00	
April 17. From Lieut.-Col. D. D. Gaillard, for endowment fund	10.00	
April 19. Proceeds of entertainment, National Theatre, April 7, for endowment fund	540.10	
April 24. Donated by Odd Fellows, Las Cascadas, for Colon fire sufferers	40.00	
April 29. Donated to Red Cross funds, employes of Panama railroad, Colon	16.28	
April 29. Membership dues during month	19.00	
Total receipts		$$9,369.27
DISBURSEMENTS.		
April 11. Relief of American at Cristobal	$15.00	
April 18. F. G. Smith, Gatun, printing supplies	2.84	
April 22. Postage	2.00	
April 27. Isthmian Canal Commission, printing and supplies, account entertainment, April 7, for endowment fund	40.62	
April 27. Empire Dramatic Company and Cristobal Vaudeville Company, account entertainment for endowment fund	100.00	
April 30. Disbursed to date on account of Colon fire	1,055.66	
Total disbursements		$1,216.12
April 30. Balance on hand		$8,153.15
On hand in general fund		$2,842.68
On hand in endowment fund		464.48
On hand in Colon fire fund		4,845.99
Total		$8,153.15

JOHN L. PHILLIPS, *Treasurer.*

Approved: C. A. DEVOL, *Chairman.*

Anti-Cigarette League.

The Boys' Anti-Cigarette League at Gorgona has just passed its second anniversary. Section No. 1, composed of boys from 12 to 16 years old, has held its meetings without a break in the schedule on alternate Wednesday evenings at the home of the league superintendent, Mrs. A. L. Hackenberg. It has a circulating library to which new books are added from time to time. The boys are interested in the Boys' Temple, which is to be erected in Chicago, and all of them have subscribed to the fund. At a recent meeting, Mr. Melville Booz addressed the boys on "Character building." There are 12 members in the section.

The membership of the junior section has increased from 11 to 23 during the past year. Their meetings are held at the home of the superintendent of the section, Mrs. J. B. March, on Friday evening of each week. There are no dues, but the treasury is maintained by a collection which is taken up at each meeting. The section has purchased a library of 30 books which are now in circulation among the members. Officers recently elected to serve for six months are: President, Carl Paulus; secretary, Ray Fisher; treasurer, Marcus Quinn; doorkeeper, Steven Duran.

The Anti-Cigarette League was organized on the Isthmus in 1909, by Dr. Dora Martin of Chicago, official representative of the National Anti-Cigarette League of America.

Memorial Day.

The United Spanish War Veterans, with the cooperation of the Red Men, Knights of Pythias, Odd Fellows and others, will hold memorial services at Mount Hope cemetery at 10 o'clock, Sunday morning, May 28

All American organizations in the Canal Zone are invited to attend these services; also, all other Americans who are not affiliated with any society. Judge Thomas E. Brown, Jr., of Cristobal will deliver the address.

Fourth of July Celebration.

At a meeting of the committee, appointed for the purpose of making arrangements for the celebration of the Fourth of July on the Isthmus, held at Ancon on May 13, it was decided to hold only one celebration and that at Cristobal. The chief clerks of the various departments and divisions will be requested to act as members of the finance committee for the purpose of furnishing subscription blanks and receiving money to pay for the celebration. The amounts remaining from last year's celebration will be available to help pay for this year's observance. The following executive committee was appointed, the members of which will act as chairmen, and select the members of the various committees:

Mr. H. H. Rousseau, Chairman.
Mr. Geo. A. Ninas, Secretary.
Capt. H. W. Stickle, Entertainment and Amusement.
Mr. J. A. Smith, Transportation.
Mr. E. J. Williams, Finance.
Capt. R. E. Wood, Fireworks.
Dr. J. C. Perry, Dance.
Mr. Tom M. Cooke, Publicity.

A meeting of the executive committee will be held in the Administration building at Ancon on Saturday, May 20, at 2 p. m.

Steam Shovel and Dredgemen.

The I. B. of S. S. and D. M. will hold its regular meeting on Sunday, May 21, at the I. C. C. lodge hall, Empire, at 12.15 p. m. We have some special business to transact, and it is absolutely important that all brotherhood men attend at this meeting.

WALTER P. TUDOR,
Secretary and Treasurer.

Empire, C. Z., May 11, 1911.

The British cruiser *Kent*, Capt. Stuart St.J. Farquhar, arrived at Panama on May 8, and the *Challenger*, Capt. Guy R. A. Gaunt, arrived on May 11. All the officers were given an opportunity to see the Canal works, and a special train was run along the line for the enlisted men.

CANAL MEDAL SERVICE BARS.

The following list contains the names of employes of the Isthmian Canal Commission, and Panama Railroad Company who completed six or four years' continuous service on the Isthmus, between January 1 and December 31, 1910, and for that reason are entitled to receive a medal bar. The list is published in order that it may be carefully checked by those interested. Any omissions, errors in the spelling of names or in the dates from which bars become due, should be reported to the Office of the Chairman at Culebra, for correction.

1910.

Name.	*Bar due.*
Snediker, Randolph E	Sept. 28
Barrett, Alexander M	Oct. 2
Craig, James G	Oct. 2
Murphy, Zan	Oct. 2
Owen, Brady R	Oct. 2
Proud, Truman C	Oct. 2
Roche, Paul E	Oct. 2
Wallendorff, Joseph	Oct. 3
Monley, Jesse	Oct. 8
Campion, John	Oct. 9
Johnson, Gilbert, Jr	Oct. 9
Kunkel, Walter J	Oct. 9
Lynn, Lewis M	Oct. 9
Metzger, Claude	Oct. 9
Parrott, Nettleton	Oct. 9
Sprouse, Frances P	Oct. 9
Pelton, Henry	Oct. 10
Walton, George E	Oct. 10
Andrews, Rollen F	Oct. 14
Hennigh, Charles G	Oct. 14
Hyde, William H	Oct. 14
Macneil, Thomas A	Oct. 14
Peterson, Julius M	Oct. 14
Thaxton, Cullen D	Oct. 14
Vandenberg, Harry	Oct. 14
Reynolds, William T	Oct. 15
Beetham, Charles H	Oct. 17
Byram, Fred B	Oct. 18
Erdman, Daniel J	Oct. 18
Fein, John W	Oct. 18
McMahon, Terrence J	Oct. 18
Sickler, Albert F	Oct. 18
Beam, Walter I	Oct. 19
Curran, James S	Oct. 19
Quinby, Benjamin C	Oct. 19
Casper, James P	Oct. 21
Hallett, Charles L	Oct. 21
Huff, Thomas T	Oct. 21
Jones, John W	Oct. 21
Lucey, James W	Oct. 21
McRobert, William W	Oct. 21
Morris, Webster	Oct. 21
Perkins, Samuel M	Oct. 21
Ploessel, Emanuel M	Oct. 21
Viall, Harry H	Oct. 21
Zinn, A. S	Oct. 21
Stancliff, Charles A	Oct. 23
Azima, Michael C	Oct. 24
Brown, Jessie B	Oct. 24
Chambers, William R	Oct. 24
Dickinson, William E	Oct. 24
Griffin, John J	Oct. 24
Myers, Forrest J	Oct. 24
Rosegrant, John H	Oct. 24
Stevens, Frank C	Oct. 24
Stover, David Z	Oct. 24
Swain, Bernie E	Oct. 24
Taylor, Richard G	Oct. 24
Bath, Ed. G	Oct. 26
Grieser, Fred A	Oct. 26
Halligan, Thomas	Oct. 26
Hennessy, Walter J	Oct. 26
Hill, Holly	Oct. 26
Kittel, Charles	Oct. 26
McDonald, Hugh M	Oct. 26
Marsh, William H	Oct. 26
Powers, Joseph J	Oct. 26
Rankin, Alvin M	Oct. 26
Seebt, John F	Oct. 26
Westcott, Fred M	Oct. 26
Woodman, Frank R	Oct. 26
Graham, John	Oct. 30
Graham, William F	Oct. 30
Hayes, Harry S	Oct. 31
Brundage, Fred H	Nov. 2
Chelf, Fielding M	Nov. 2
Erdman, Roger S	Nov. 2
Haynes, John N	Nov. 2
Pendry, Charles A	Nov. 2
Perry, Hobart E	Nov. 2
Piper, William T	Nov. 2
Rector, Josephine	Nov. 2
Reichenbach, Geo. E	Nov. 2
Thurston, Edward D	Nov. 2
Watkins, William	Nov. 2
Whitehead, George	Nov. 2
Coultripp, Robert	Nov. 3
Falkner, William H	Nov. 4
Pickel, Oscar C	Nov. 4
Richards, Arthur R	Nov. 4
Hobson, Clarence O	Nov. 5
Speicher, John	Nov. 5
Kehm, Herman	Nov. 5
Bower, William M	Nov. 6
Campey, George M	Nov. 6
Monk, Herman V	Nov. 6
Moran, William A	Nov. 6
Wright, Charles	Nov. 6
Warren, Edward L	Nov. 7
Pring, Clyde E	Nov. 8
Boxer, Charles W	Nov. 12
Dorson, Frank	Nov. 12
Fleischman, Isaac H	Nov. 12
Helmerichs, Otto	Nov. 12
McNeal, George A	Nov. 12
Scribner, David W	Nov. 12
VanBrocklin, Arthur C	Nov. 12
Arden, Oliver	Nov. 14
Moore, William J	Nov. 15
Coulborn, Edward I	Nov. 16
Jennings, Allan H	Nov. 16
Kneeland, J	Nov. 16
Newdick, Alton H	Nov. 16
Pettoletti, Lauritz	Nov. 16
Taylor, William D	Nov. 16
Lillie, Charles D	Nov. 18
Strock, William T	Nov. 18
Fey, William L	Nov. 19
Borroto, Reginald F	Nov. 20
Etowski, Joseph	Nov. 20
Fagan, Samuel	Nov. 20
Farrell, James H	Nov. 20
Fox, Maurice W	Nov. 20
Joyner, Charles K	Nov. 20
Milligan, William G	Nov. 20
Nims, Willard W	Nov. 20
Rutledge, Richard B	Nov. 20
Smith, Lewis A	Nov. 20
Stoddard, Richard J	Nov. 20
Turner, Edward K	Nov. 20
Smallwood, William P	Nov. 22
Hoagland, Richard C	Nov. 23
Wirz, Charles C. J	Nov. 23
Barrows, Arthur C	Nov. 26
Burdge, Leroy E	Nov. 26
Burmester, Edward A	Nov. 26
Callizo, Julius	Nov. 26
Deyo, Daniel B	Nov. 26
Ewing, Ora M	Nov. 26
Johannes, Guy	Nov. 26
Moffat, David H	Nov. 26
Rau, Charles R	Nov. 26
Shepard, Frank A	Nov. 26
Kirby, Jeremiah F	Nov. 27
Sneed, James W	Nov. 28
Davoll, Charles E	Nov. 29
Harris, Thomas H	Nov. 29
Heverly, Ernest W	Nov. 29
Johnson, Frank E	Nov. 29
Tubert, Edward	Nov. 29
White, Hugh J	Nov. 29
Brown, Ed Lee	Nov. 30
Calvit, Stephen	Nov. 30
Donaldson, William J	Nov. 30
Fields, John B	Nov. 30
Foster, Frank	Nov. 30
Griffin, Herbert E	Nov. 30
McPeake, John C	Nov. 30
Meacham, Fred	Nov. 30
Smith, Arman	Nov. 30
Wagner, George D	Dec. 1
Duey, William J	Dec. 3
Halstead, William M	Dec. 3
Bryant, Edward J	Dec. 5
Caton, Armisted T	Dec. 5
Marstrand, Otto T	Dec. 5
Ward, William H., Jr	Dec. 5
Strong, James M	Dec. 7
Butler, William H	Dec. 10
Carson, George B	Dec. 10
Brown, Robert H	Dec. 11
Ramsey, Horace E	Dec. 11
Arthur, Robert T	Dec. 13
Kerruish, William L	Dec. 13
Elliott, J. W	Dec. 14
Hartwig, Arthur H	Dec. 15
Murtha, W. J	Dec. 15
Erskine, William A	Dec. 18
Whitwood, Leroy	Dec. 18
Healey, Edward B	Dec. 19
Poyle, Ransome	Dec. 19
Tate, Gilbert M	Dec. 19
Engesser, Conrad	Dec. 20
Ford, Walter G	Dec. 21
Gaeb, Harry J	Dec. 21
Burch, James L	Dec. 22
Hardy, Ernest	Dec. 22
Bressler, Francis N	Dec. 24
Baughman, Edward H	Dec. 28
Chidester, Walter S	Dec. 28
Edmands, Wm. H., Jr	Dec. 28
Hill, Charles H., Jr	Dec. 28
Hill, Iver G	Dec. 28
Kuehnle, Adolph G	Dec. 28
Loring, Ralph B	Dec. 28
Stolberg, Ernest W	Dec. 28

Second Service Bar.

1910.

Name.	*Bar due.*
Connolly, M. B	May 4
Skipper, A	May 4
Nichols, Aurin B	May 31
Tenny, Mark W	June 2
Baldwin, Ralph P	June 8
Hortenstine, James W	June 8
Johnson, Natt M	June 8
Wells, George M	June 8
Wright, Daniel E	June 8
Perry, James C	June 27
Pierce, Claude C	June 27
Gorgas, William C	June 28
Hall, William H	June 28
Kenealy, Patrick	June 28
Wood, William M	July 5
de Obarrio, Pedro	July 9
Richardson, Gibbon O	July 9
Beverley, Edward P	July 13
Herrick, Alfred B	July 13
McDonald, Donald E	July 13
Noland, Lloyd	July 14
Lundishef, Alex. A	July 15
Emery, Walter	July 19
Sinclair, Joseph M	July 19
Smith, Eleanor J	July 19
Thom, Leslie G	July 19
Turner, Anna R	July 19
Galyon, Charles L	July 24
Butters, Charles M	July 26
Cooke, Tom M	July 26
Murphy, William J	July 26
Reidy, John J	July 26
Caldwell, George A	July 28
Nolan, John L	Aug. 1
Boyd, Oscar S	Aug. 9
Rerdell, M. C	Aug. 9
DuBois, Louis E	Aug. 16
Kiernan, John C	Aug. 29
Hummer, Charles D	Sept. 10
Parker, Charles	Sept. 12
Alexander, Elias E	Sept. 14
Meech, Marietta L	Sept. 14
Herz, Max	Sept. 27
Padgett, Monroe L	Oct. 10
Leonard, Harry	Oct. 17
Glaw, Robert W	Oct. 18
Moore, Frank E	Oct. 21
Torbert, William A	Oct. 25
Cotton, Frank	Oct. 26
Walsh, Thomas J	Oct. 26
Donahue, Daniel F	Nov. 1
Parker, Charles L	Nov. 1
Rowe, Hartley	Nov. 1
Prlal, Mary	Nov. 8
Sweeton, Gertrude	Nov. 8
Mason, Albert P	Nov. 25
Dennis, Durward W	Dec. 1
La Rock, John	Dec. 1
Osborne, Herbert	Dec. 4
Connor, Michael E	Dec. 5
Bates, Phil M	Dec. 6
Bates, William H	Dec. 6
Kirk, Joseph S	Dec. 20
Meehan, John J	Dec. 20
Bodette, William	Dec. 27
Buchan, George	Dec. 27

PANAMA RAILROAD COMPANY EMPLOYES.

1908.

Name.	*Date.*
Wood, A. C	Jan. 6
Cespedes, Dora B	Jan 10
Cartwright, J. G	Jan. 13
Mara, Thomas	Jan. 17
Kinsman, F	Jan. 23
Weller, J. H	Jan. 27
Gross, J. J	Jan. 31
Miller, W. L	Feb. 1
Beaumont, Joseph	Feb. 5
Ernst, A. H	Feb. 13
Fulton, E. E	Feb. 17
Roland, W. J	Feb. 17
McCartney, J. W	Feb. 27
Beverly, May	Mar. 1
Kerr, J. L	Mar. 1
Huck, F. E	Mar. 2
Jamieson, J. H	Mar. 2
Mullen, H. E	Mar. 2
Wheelan, R. E	Mar. 3
Whiteman, Edina S	Mar. 3
Grant, Louise P	Mar. 14
Hoffman, C. D	Mar. 14
McCarthy, J. S	Mar. 14
Geenzier, C. H	Mar. 18
Belsted, Thomas	Mar. 20
Herring, G. R	Mar. 20
Hart, R. W	Mar. 30
Bauer, R	Apr. 1
Avery, C. F	Apr. 2
Blair, F. W	Apr. 9
Gurnett, M. T	Apr. 13
Heald, S. W	Apr. 13
Maggard, L. B	Apr. 22
Goddard, A. J	Apr. 23
Mendoza, A. A	Apr. 28
Finegan, John	May 1
Kelly, J. F	May 7
Geddes, C. J	May 16
Paul, C. P	May 16
Pierce, E. F	May 24
Pierce, R. T. B	May 24
Moore, Sidney	May 25
Crutcher, J. E	June 5
Grant, H. P	June 6
Culbertson, M	June 13
Moyer, R. N	June 14
Blair, H. J	June 19
Wilson, H. C	June 22
Riddle, O. B	July 6
Kane, George H	July 7
Brosnahan, John	July 9
Roos, N. L	July 13
Klein, G. M	July 17
Auerbach, H. B	July 29
Dahl, Ole	Aug. 5
Corbett, W. S	Aug. 12
Davis, W. F	Aug. 12
Guiney, James	Aug. 14
Davis, W. S	Aug. 15
Edwards, G. H	Aug. 16
Reynolds, T. M	Sept. 5
Sims, C. A	Sept. 8
Egan, C. M	Sept. 11
Thornton, S. G	Sept. 11
Blumer, J. G	Sept. 15
Roberts, R. W	Sept. 15
Busby, F. L	Sept. 17
Ott, Claude	Sept. 22
Miller, C. C	Sept. 23
Hanrahan, T. J	Sept. 24
LeMay, Lumena	Sept. 28
Baughman, R. C	Oct. 5
Snapp, C. J	Oct. 8
Little, C. C	Oct. 16
O'Keefe, T. F	Oct. 16
Cooper, Arthur	Oct. 21
Cook, Carl	Nov. 1
Neece, V. A	Nov. 9
Greenman, A. A	Nov. 11
Beers, G. K	Nov. 18
Akins, C. C	Nov. 21
Kowalski, Max	Dec. 1
Utley, A	Dec. 1
Patterson, J. A	Dec. 16
Moore, P. H	Dec. 19
Johnson, M. W	Dec. 20

Service Bar.

Name. **1910.**	*Bar Due.*
Hoyt, P. G	Jan. 4
Arthur, A	Jan. 15
Miles, L. E	Jan. 22
Bain, W. H	Feb. 1
Thornton, E. B	Feb. 1
Clisbee, F. A	Feb. 13
Henderson, Percy H	Feb. 17
Walcott, W. E	Feb. 23
Reynolds, F. N	Feb. 26
Raymond, F	Mar. 8
Nichols, W. C	Mar. 11
McGillicuddy, J. J	Mar. 16
Keeler, Thomas L	Mar. 17
Butler, J. E	Mar. 26
Berry, James	Mar. 31
Baxter, H	May 10
Mears, Frederick	May 11
Boland, John	May 15
Bryant, J. H	May 21
Keefer, P. B	May 31
Johnson, H. E	June 15
Omeallia, Ruth	June 19
Granberry, O. E	June 19
Luce, R. H	June 20
Fennell, B. M	June 24
Roenspie, Fred	June 24
Heath, W. H	July 5
Luther, J. H	July 15
Tinsley, E. C	July 25
Hescher, C. F	July 25
Moore, C., Jr	Aug. 5
Kilgour, O. C	Aug. 5
Jones, Kemp G	Aug. 5
Lough, Matthew H	Aug. 13
Hollowell, Fred	Aug. 13
Doyle, J. P	Aug. 18
Hiltabidle, Chas. T	Aug. 20
Falkner, George E	Aug. 24
Bliefield, W	Aug. 27
Stewart, A. H	Aug. 29
Bissell, Walter J	Sept. 4
Orr, E. F	Sept. 4
Gilmore, M. E	Sept. 4
Clark, Michael A	Sept. 13
Conner, Robert	Sept. 14
Gifford, H. L	Sept. 17
Collins, H. S	Sept. 17
Babbitt, R. W	Sept. 23
Nielsen, Christian L	Sept. 28
Walker, R. B	Oct. 2
Kratz, A. B	Oct. 2
Stuntz, H. L	Oct. 3
Readle, William H	Oct. 16
Moore, J. A	Oct. 16
Spencer, A. E	Oct. 23
Dawson, B. J	Oct. 26
Carter, C. H	Oct. 26
Strobridge, Fred L	Nov. 4
McLean, Neil	Nov. 6
Goodenow, A. B	Nov. 12
Renton, A. J	Nov. 20
Johnson, A. S	Nov. 20
Hunter, George	Dec. 5
Lee, C. W	Dec. 10
Raymond, Vincent	Dec. 16
Zook, E	Dec. 17

Second Service Bar.

1910.

Name.	*Bar due.*
Anderson, Henry	May 4
Baker, P. G	May 4
Belt, Josiah	May 4
Bergin, R. W	May 4
Brewer, W. T	May 4
Chester, W. C	May 4
Clark, T. H	May 4
Davies, Thomas J	May 4
Davis, John	May 4
Gilbert, William	May 4
Hoffman, A. C	May 4
Hunt, J. St.C	May 4
Jussen, A. S	May 4
Kallish, B. A	May 4
Leeds, E. W	May 4
Northrop, C. W	May 4
Schuber, J. B	May 4
Wardlaw, R. H	May 4
Warren, J. C	May 4
Wilson, George F	May 4
Nunn, Numa	July 1
Davidson, Silas	July 5
Ruggles, George H	Sept. 20
Griggs, A. C	Sept. 27
Angel, J. C	Nov. 1
Laughlin, R. E	Nov. 28
Bleakley, C. L	Dec. 6

P. R. R. INSURANCE.

No Policies will be Carried Hereafter Covering Fire or Marine Losses.

The Sundry Civil Act of March 4, 1911, contained a provision that, "Hereafter, the Panama Railroad Company shall carry no insurance to cover marine or fire losses, nor make any further payment on the principal or interest on notes heretofore given by it to the United States for moneys appropriated for its use."

This law supersedes that of the Acts of 1908, 1909, and 1910, which provides that appropriations for Canal work might be used to reimburse the Panama railroad, for any marine and fire losses, and that the railroad company should no longer carry insurance. Under the new law, the railroad will neither carry insurance, nor be reimbursed for marine and fire losses from Canal funds, the Government policy of not carrying insurance, being established.

During the nine years and one month preceding July 1, 1908, the Panama Railroad Company paid for insurance: On account of the steamship line, aggregating $296,402.34; and for the 25 months ending July, 1908, premiums were paid on account of the railroad amounting to $48,529.20.

During this period underwriters reimbursed for losses, as follows: On account of steamship line $118,470.57; on account of the railroad $9,082.79.

Motor Car Repair Shop at Culebra.

An addition will be made to the motor car garage at Culebra, which will provide space for the installation of a lathe and other machinery for making ordinary repairs to motor cars. Some of the equipment for this purpose will be transferred from the Cocoli shop of the Pacific Division, which was shut down a short time ago. Three additional tracks will also be provided, making four in all, three of them to be used in housing the motor cars, and the fourth as a repair track, with a pit underneath. On the lower floor of the building, as enlarged, there will be, in addition to the track space and main repair shop, a forge room, store room, and quarters for three flagmen. On the second floor are quarters for three motor car drivers. There are six motor cars in the service of the Commission, one in each of the three engineering divisions, and three stationed at Culebra.

Postal Business and Canal Zone Revenues.

The report of the Director of Posts for the month of April shows that 17,933 money orders were issued, amounting to $450,472.57. Of this amount, $335,854.11 was issued payable in the United States, $113,893.76 payable in the Canal Zone, $565.70 in Martinique, and $159 in Costa Rica. The fees collected amounted to $1,976.87, and the amount paid and repaid was $121,382.72.

Postal sales during the month amounted to $6,051, and newspaper postage $0.10.

The revenue collections for the month were, as follows:

Distillation licenses	$264.16
Insurance companies' fees	50.00
Motor vehicle licenses	37.00
Taxes, licenses, etc	10,399.48
Total	$10,750.64

Care of Disabled and Indigent Canal Workers.

The following bill has been introduced in the House of Representatives by Representative G. W. Kipp of Pennsylvania, and has been referred to the Committee on Interstate and Foreign Commerce:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That on and after July first, nineteen hundred and eleven, all disabled or indigent employes of the United States of America on the Panama Canal, or works adjacent thereto, shall be admitted, kept, and sustained by the United States of America in the several soldiers' homes of the United States, under such rules and regulations as the Isthmian Canal Commission may determine.

PERSONAL.

Maj. E. Eveleth Winslow, Corps of Engineers, U. S. A., arrived on the Isthmus on the *Panama* on May 12, for consultation regarding the fortifications of the Canal.

Lieut. Walter D. Smith left on the *Ancon*, on May 10, on his annual leave of absence in the United States.

Mr. Homer A. A. Smith, who has been appointed Examiner of Accounts, accompanied by his family, will arrive on the Isthmus on the *Advance* on May 19.

Rifle Match.

The Canal Zone Rifle Club met the Marine Corps riflemen in a match on the range at Gamboa on May 14, with the following result:

U. S. M. C., CAMP ELLIOTT.

NAME.	200 yards	300 yards	500 yards	600 yards
Boyle	43	44	43	47
Brong	41	32	43	43
Bleicher	38	40	42	38
Cook	36	39	39	39
Rearden	37	41	46	44
CANAL ZONE RIFLE CLUB.				
Kane	41	44	48	42
Casper	41	36	40	39
Walraven	38	42	46	35
Blaisdell	37	33	35	27
Green	35	42	37	37

Pilots, Masters, Mates, and Engineers.

A meeting of the Board of Local Inspectors will be held on Wednesday, May 24, at 8 a. m., at the Administration building, Ancon, at which time applicants for licenses as pilots, masters, mates, or engineers, who have submitted applications on the prescribed form, may appear for examination.

Examination of Colored Teachers.

Colored teachers not holding exemption certificates issued from this office, and all others who desire, may sit at the examination to be held on Saturday, June 10, 1911, at the Ancon schoolbuilding. There will be two sessions of this examination, the first from 8 to 11.30 a. m., and the second from 1 until 4 p. m. The subjects will be United States history, arithmetic, geography, grammar and hygiene.

The examination is open to all, and no application need be made to this office.

FRANK A. GAUSE,
Superintendent of Schools.

Ancon, C. Z., May 10, 1911.

The Hamburg-American Line announces a special rate of $50 between New York and Colon, for students under 20 years of age, presenting a certificate from the principal of the school which they are attending. The reduced rate will be in effect from June 15 to September 30.

EXECUTIVE ORDER.

Imprisonment for Return After Deportation.

By virtue of the authority invested in me, I hereby establish the following Order for the Canal Zone:

Article 1. If any person after having been convicted and having served a sentence of imprisonment in the Canal Zone, and after being deported therefrom, returns to the Canal Zone, he shall be deemed guilty of a felony and punished by imprisonment in the penitentiary for one year, and thereafter removed from the Canal Zone in accordance with the laws and orders relating to deportation.

Article 2. This order shall take effect from and after this date. WM. H. TAFT.

THE WHITE HOUSE, *May 2, 1911.*
[No. 1345.]

United Spanish War Veterans.

The next regular meeting of Col. Wm. L. Sibert Camp, No. 1, U. S. W. V., will be held in Gatun lodge hall on Sunday afternoon, May 28. All veterans are invited to attend. All men eligible to membership in the U. S. W. V. are invited to a "smoker" to be held in Gatun lodge hall on Saturday evening, May 20, under the auspices of Sibert and Chagres camps. Refreshments will be served.

Ancon Crusher.

A statement of the rock crushed at Ancon quarry during the week ending May 13, follows:

DATE.	Hours worked.	Cubic Yards.
May 8	7:35	2,538
May 9	7:40	2,479
May 10	6:10	2,566
May 11	7:20	2,567
May 12	6:40	2,714
May 13	7:45	2,991
Total	43·10	15,855

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the week ending May 13, follows:

DATE.	Hours worked.	Cubic Yards.
May 8	4:44	1,890
May 9	5:12	2,295
May 10	5:15	2,205
May 11	5:03	2,284
May 12	4:07	2,092
May 13	4:13	1,587
Total	28:34	12,353

Obituary.

James B. Harlow, an employe of the Atlantic Division residing at Panama, died in Ancon Hospital on May 12. He was 36 years of age, and had been on the Isthmus five years, coming here from New York. He is survived by his wife.

William A. Skipper, an employe of the Panama railroad, died at the dispensary at Monte Lirio on May 11. He was 41 years of age, and had been on the Isthmus 15 years, coming here from Russ, Texas. He is survived by his wife, Catherine Skipper, living at Tabernilla, C. Z.

Missing Men.

Any one having information regarding the whereabouts of Edward Barclay, who is supposed to be on the Isthmus of Panama, is requested to communicate with W. M. Duncan of Russellville, Ky.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

The next entertainment to be given in the clubhouses will be that of Professer Erneste Kellermann, by the Hill Magical Company. Professor Kellermann has a complete outfit for his work valued at several hundred dollars. He performs mostly with apparatus, and the entertainment is, therefore, spectacular. The following dates have been arranged: Gatun, Monday, May 22; Gorgona, Friday, May 26; Cristobal, Tuesday, May 30; Empire, Wednesday, June 7; Corozal, Friday; June 16; Culebra, Thursday, June 22.

COROZAL.

The Culebra indoor baseball team defeated the local team on Saturday night, May 13, by the score of 18 to 17.

The Culebra boys played baseball with the Corozal boys on Saturday morning, and Culebra won.

At the concert on Sunday evening, a chorus of 16 voices assisted in carrying out the following program: Introduction, orchestra; song, "Holy, Holy, Holy," congregation; Bible reading and prayer, the Rev. A. A. Nellis; "Unfold the Portals" (Redemption, by Gounod,) Corozal chorus; address, the Rev. A. A. Nellis; tenor solo, "Rock of Ages," (H. Johnson,) Mr. Kramer, violin obligato, Miss LeMay; "Holy Art Thou" (Largo, Xesxes) "Ninety and Nine," (Campion,) Mrs. Boyd; "The Heavens Are Telling," (Creation,) Corozal chorus; "My Country 'Tis of Thee," congregation. Those taking part in the concert were; Soprano soloist, Mrs. A. P. Boyd; pianists, Mrs. A. G. Farmer, and Mrs. R. C. Hinton; tenor soloist, G. R. D. Kramer, Jr.; violinist, Miss L. LeMay; tenors, F. J. Wallace, A. R. Smith, A. Sales, G. R. D. Kramer, Jr.; sopranos, Mrs. A. P. Boyd, Mrs. R. A. Bennett, Mrs. V. T. Cornwell, Mrs. R. C. Hinton; basses, H. O. Cole, W. R. Catline, A. S. Garrison, R. A. Wilson, F. H. Nagle; altos, Mrs. R. Norton, Mrs. H. E. Walton, Miss A. Mostella, Miss L. LeMay; musical director, G. R. D. Kramer, Jr.

CULEBRA.

In the bowling match last Saturday night, Cristobal took three straight games from Culebra. The score follows:

Cristobal.				Culebra.			
Barrett	79	101	110	Conlon	83	84	104
Rosteck	82	90	93	Crain	91	89	79
Furlong	106	94	102	Hurst	87	97	69
Herrington	113	81	95	Judge	96	85	97
Louch	77	81	109	Mengel	86	84	110
Total	457	447	509	Total	443	439	459

A gymnasium class for men will be started next week, meeting on Monday and Thursday afternoons from 5.15 to 5.45. Systematic exercise of a recreative nature will govern the work and special stress will be laid on individual needs.

EMPIRE.

Empire took two out of three duckpin games from Gorgona on Saturday evening, May 13, by the following score:

Empire.				Gorgona.			
Davis	81	85	83	Simka	80	87	84
Pinney	87	87	81	Siebt	76	73	87
Sawtelle	87	89	108	Atkins	78	70	81
Giavelli	69	87	79	Orr	76	82	105
Rodeghiero	92	95	87	R. Van	80	89	....
				Haldeman			105
Total	416	443	438	Total	390	401	462

The following high scores were rolled in duckpins during the past week: P. F. Brown, 112, 100; Nelson, 101; Lippert, 105, 100; Pinney, 103, 100, 107; Van Brocklin, 104; Giavelli, 103; 105, 101, 102; Reiman, 107, 109; Gorham, 100, 103; Potter, 112, 103; Rodeghiero, 100; Akers, 104; Johnson, 110, 111; Parkis, 110.

The following program was given in the hall on Friday evening, May 12: Concert by Gilman's orchestra; reading, O. Harlan; discussion of the Mexican situation by Messrs. Zacharias and Simpson; and of "The rise and growth of socialism," by Mr. Sawtelle; refreshments.

The literary society is contemplating a debate by the older school boys of Empire in the near future.

All the May records have been added to the graphaphone library. Among them is one of the song of a captive nightingale, the first made of a bird's song.

A committee has been appointed to make an index, by subject, of the leading contents of the magazines and papers.

The baseball game scheduled for May 13 was forfeited to Empire, because of the nonarrival of the Gatun team.

GATUN.

A farewell reception was tendered to Archie O. Ludwig, physical director, and Mrs. Ludwig, on Tuesday evening, May 9. The hall was decorated with flowers pictures and pennants. The following program was given: Piano selections, medley of popular airs, A. B. Dickson; tropical male quartet, Messrs. Ross, Dickson, Young and Case; soprano and tenor duet "Il Trovatore," Mrs. Ludwig and Mr. Ross; baritone solo, Frank Young; tenor solo, A. B. Dickson; bass solo, E. Paul Case; humorous sketch, Frank Young; soprano solo, Mrs. A. O. Ludwig; tenor solo, W. G. Ross; selection, tropical male quartet; remarks by the secretary, the Rev. C. O. Purdy, C. C. Carr, and Charles E. Wood. Presentation of gifts to Mr. and Mrs. Ludwig and daughter, Dorothy, was made by the secretary in behalf of the council and Y. M. C. A., and a set of resolutions was also presented.

The "Life problem" club discussed "The church as an institution" on Sunday night, May 14, and will take up the problems of the physical life on Sunday evening, May 21.

At the literary club's meeting on May 10, Mr. Smith and Mr. Williams upheld the affirmative, and Mr. Gilkie and Mr. Dougherty the negative of a debate on "Resolved that every voter should have at least a common school education." On May 17, the subject for debate will be "Resolved that the world is growing better;" affirmative, Messrs. Cotton and Roudabush; negative, Messrs. Purdy and Rosselot. The chairman of the judges will be R. M. Sands.

The "D A K S" defeated the Gatun Ds two out of three games of duckpins on May 10.

CRISTOBAL.

The standing in the Isthmian Duckpin League is, as follows:

	Played.	Won.	Lost.	Per cent.
Cristobal	24	19	5	.797
Empire	24	13	11	.541
Culebra	24	11	13	.458
Gatun	24	9	15	.375
Gorgona	24	8	16	.333

Cristobal won two out of three games on Saturday night in the duckpin league series from Culebra in the following scores:

Culebra.				Cristobal.			
Fredericks	97	86	81	Smith	101	85	96
Huttlemeier	89	84	89	Jacques	93	79	82
Kersey	87	81	93	DeCora	92	87	114
Hill	87	95	97	Sullivan	84	97	91
Case	82	101	84	Herring	89	80	112
Total	442	447	444	Total	459	428	495

The literary and debating club met on Wednesday night, with the following subject for debate: "Resolved that the Panama Canal shall not be fortified." Messrs. Chambers and Elliott debated for the affirmative, and Messrs. Wempe and Richards for the negative. Messrs. Hoyt, Storla and Hackenberg acted as judges, rendering a decision in favor of the negative.

The Gatun debating society has challenged the Cristobal debating club to a joint debate to be held in the near future.

On Wednesday of this week, there is to be a discussion on New York City politics by Judge Thos. E. Brown, Jr., and C. J. Dinnon, both of whom have been actively interested in New York politics.

Lease of Lots in Colon.

Sealed bids will be received up to 5.30 p. m., Wednesday, May 31, 1911 for lease to the highest bidder of lots in the newly filled section of Colon as shown on plans which may be seen at the Land Office in Colon and at the Land Office in Panama.

These sealed bids must be addressed to the General Superintendent of the Panama Railroad Company, Colon, and must be plainly marked on the outside of the envelope "Proposal for lot No. ——, block No. ——, Colon." Bids not marked in this manner will not be considered.

The minimum rental to be accepted for these lots may be ascertained by applying to either one of the above mentioned Land Offices.

Persons holding options on any lots in this district and having paid rental up to June 30, 1910, will have the privilege of taking the lot at the highest rate offered.

The lots to be leased are those on the west side of E street between 2d street and 14th street, and that district on the east side of E street bounded by 2d street on the north, 9th street on the south, E street on the west and G street on the east,

Those lots on the west side of E street will be available for building on or about June 1, 1911; the balance of the lots will not be available for building before October 1, 1911.

Parties submitting bids must state character and purpose of building they intend to erect, and must indicate period of time in which they expect to commence construction after assignment.

Application blanks may be obtained at the Land Office in Colon and Panama.

All rental is to be paid quarterly in advance.

The Panama Railroad Company reserves the right to reject any or all bids.

J. A. Smith,
General Superintendent.

Colon, R. P., April 22, 1911.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending May 24, 1911, (75th meridian time):

Date.	Low.	High.	Low.	High.
	A. M.	A. M.	P. M.	P. M.
May 18	12.50	6.52	1.12	6.58
May 19	1.30	7.31	1.53	7.38
May 20	2:12	8.16	2.43	8.28
May 21	3.02	9.10	3.42	9.28
May 22	4.01	10.10	4.45	10.36
May 23	5.05	11.12	5.45	11.45
		P. M.		
May 24	6.05	12.10	6.44	......

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, May 13, 1911. All heights are in feet above mean sea level.

Day and Date.	Station. Vigia.	Albajuala	Gamboa.	Bohio.	Gatun Lake.
Sun. May 7	129.1	95.2	47.9	14.6	14.4
Mon. May 8	131.2	96.4	49.2	14.4	14.4
Tues. May 9	130.0	95.5	49.2	15.0	14.6
Wed. May 10	128.9	95.4	48.4	15.2	14.9
Thurs. May 11	130.5	95.8	48.0	15.7	15.3
Fri. May 12	130.0	95.8	48.8	16.1	15.8
Sat. May 13	133.0	97.3	50.9	16.9	16.0
Height of low water	125.0	92.0	44.0		

Rainfall from May 1 to 13, 1911, Inclusive.

Stations.	Maximum in one day	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	2.19	11	4.12
Balboa	1.64	11	3.65
Miraflores	1.55	13	5:00
Pedro Miguel	1.87	13	4.38
Rio Grande	2.97	11	9.06
Central Section—			
Culebra	2.24	11	7.65
*Camacho	2.92	9	8.62
Empire	2.57	11	7.38
Gamboa	4.02	11	9.65
*Juan Mina	4.10	11	10.18
Alhajuela	3.18	13	11.10
*El Vigia	1.50	11	7.78
*Gorgona	5.45	13	11.68
San Pablo	2.08	5	5.65
Tabernilla	2.84	5	5.53
Bohio	1.97	11	4.29
*Monte Lirio	3.90	11	9.43
Atlantic Section—			
Gatun	1.81	10	8.20
*Brazos Brook	2.55	10	9.76
Cristobal	2.44	6	6.43
Porto Bello	5.14	2	†8.92
*Nombre de Dios	6.77	2	12.35

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

†To 5 p. m., May 12.

WEATHER CONDITIONS, CANAL ZONE, APRIL, 1911.

Stations.	Press're (reduc'd to mean of 24 hours.)	Temperature.					Mean relative humidity.	Precipitation.			Wind.				
		Mean.	Maximum.	Date.	Minimum.	Date.		Total inches.	Station average.	Number of rainy days.	Total movement (in miles.)	Prevailing direction.	Max. velocity (in miles.)	Direction.	Date.
Cristobal	29.840	79 6	84	22	74	17	85	3.06	4.16	21	9,187	N.	28	N.	16
Culebra	29.838	80.2	92	29	69	1	86	4.89	3.83	14	6,450	N.W.	31	N.	15
Ancon	29.827	81.2	94	23	71	7	84	6.34	2.77	17	5,653	N.W.	24	N.	11

OFFICIAL CIRCULARS.

Acting Chief Sanitary Officer.

CULEBRA, C. Z., May 10, 1911.

CIRCULAR No. 389:

During the absence on leave of Colonel W. C. Gorgas, Chief Sanitary Officer, beginning May 11, 1911, Lieutenant-Colonel John L. Phillips is designated as Acting Chief Sanitary Officer.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Transportation of Employes.

CULEBRA, C. Z., May 10, 1911.

CIRCULAR No. 175-F:

1. Effective this date, the following rules will govern the issuance of free and reduced transportation to employes on the steamers of the Panama Railroad Steamship Line, *upon termination of service*:

(*a*) *Free Transportation*—To American employes, irrespective of the origin of their appointment, who resign, or are discharged, after two year's continuous service; to American employes, irrespective of the origin of their appointment, whose employment is terminated by, or at the instance of the Commission, after less than two years' service, for any reason other than inefficiency or misconduct; to aliens appointed in the United States who resign, or are discharged, after two years' continuous service; to aliens appointed in the United States whose employment is terminated by, or at the instance of the Commission, after less than two years' service, for any reason other than inefficiency or misconduct.

(*b*) *Thirty Dollar Rate*—To American employes appointed after December 31, 1908, who resign, or are discharged for inefficiency or misconduct, after serving more than six months, but less than two years; to aliens appointed in the United States who resign, or are discharged for inefficiency or misconduct, after serving more than six months, but less than two years; to aliens appointed on the Isthmus who resign, or are discharged for inefficiency or misconduct, after serving two years; to aliens appointed on the Isthmus who are discharged on account of reduction in force, regardless of length of service.

(*c*) *Forty-five Dollar Rate*—To American employes who resign, or are discharged for inefficiency or misconduct, after serving less than six months; to aliens appointed in the United States who resign, or are discharged for inefficiency or misconduct, after serving less than six months; to aliens appointed on the Isthmus who resign, or are discharged for inefficiency or misconduct, after serving less than two years.

(*d*) *Fifteen Dollar Steerage Rate*—To all employes on the gold roll, and American employes on the silver roll, who may apply for it.

2. Employes entitled to free transportation to New York on the Panama Railroad Steamship Line may be granted instead free transportation to New Orleans on the United Fruit Company, or Leyland Line, if they so desire: or free transportation to San Francisco on the Pacific Mail Steamship Company's Line, provided they originally sailed from that port under regular appointment from the Washington office.

3. An employe entitled to free transportation to New York or New Orleans, however, who desires to return to the United States via San Francisco, will be granted a reduction of forty dollars (which the Commission pays for transportation to the former points) from the regular employe's rate to San Francisco, the forty dollars to be paid by the Commission direct to the steamship company.

4. Transportation must be applied for within 30 days from the date of termination of service, and will not be issued for a steamer scheduled to sail more than 60 days from the date of such termination.

5. An employe who enters upon leave of absence, and whose service will terminate at the expiration thereof, will not be granted free transportation, but only such transportation as he may be entitled to on account of leave.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

CULEBRA, C. Z., May 12, 1911.

CIRCULAR No. 175-G:

An employe appointed on the Isthmus for temporary service will not be accorded the benefits of Section "*a*," Paragraph 1, of Circular No. 175-F, upon the termination of such temporary employment.

Employes so appointed will be granted the thirty dollar rate upon termination of service, at the instance of the Commission, for any reason other than inefficiency or misconduct.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Patterns for Castings.

CULEBRA, C. Z., May 15, 1911.

CIRCULAR No. 197-I:

When a work request is submitted on Form 159 C. E. for the making of a casting by the Mechanical Division in accordance with a new drawing, the head of the division or department will send a print thereof to the Superintendent of the Mechanical Division with request that the number assigned to the pattern be entered on the print and the latter returned, in order that the correct pattern number may be entered on the tracing of the drawing. As far as practicable, prints of the tracing should be made for distribution to construction and shop officials, except the prints accompanying the work request for the castings, after the pattern number has been entered on the tracing.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission arrived at the ports of Cristobal, Colon, and Balboa during the two weeks ending May 13, 1911:

Ancon, April 30, from New York, with 72,020 bags cement, 7 barrels brick for Pacific Division; 29 cases desks for Civil Administration; 7 cases motor car material for Mechanical Division; 75 cases drugs and sundries for Sanitary Department; 65 bags feed, 25 kegs barrel heads, 76 bundles hoops and staves, 150 cases washing powder, 124 cases refined and mineral oils, 56 barrels locomotive cable oils, 255 drums valve and car oils, 800 pails lubricating grease, 89 pieces lumber, 37 cases water meters for stock; 6 barrels globes and lanterns, 11 cases globes and lanterns, 6 cases rubber sleeves for Atlantic Division.

Venus, April 30, from Baltimore, with 24 kegs lock material, 120 bundles lock material, 136 pieces lock material, 28 cases lock material, 12 crates lock material, 120 pieces galvanized pipe, 36 crates lock material, 3 bundles lock material, 4 cases lock material, 54 pieces lock material, 978 pieces angle reinforcements for Atlantic Division; 46 pieces castings, 6 cases glass, 120 pieces galvanized pipe, 80 pieces valve material, 16 cases valve material, 5 cases castings, 19 bundles castings for Pacific Division; 1,200 car wheels for Mechanical Division; 230 kegs bolts and screws for Central Division; 500 kegs track spikes, 10 bales mattresses, 200 bundles white pine lumber, 500 cases dynamite, 874 pieces steel plates for stock.

Prinz Joachim, April 30, from New York, with 201 cases fuzes for stock.

Turrialba May 4, from New Orleans, with 195 crates tiles for Atlantic Division; 6 bundles bed springs, 511 sacks oats, 436 bundles straw, 1,377 bundles (bale hay, 11 bales moss 4,692 pieces yellow pine lumber for stock.

Zacapa, May 4, from New York, with 4 cases electrical material for Atlantic Division; 34 cases tape fuse, 28 cases brooms for Mount Hope.

Sellesia, May 4, from New York, with 14,0[illegible]5 barrels cement for Atlantic Division; 56,840 bags cement for Pacific Division.

Minister Delbeke, May 5, from Jacksonville, with 1,647 bundles yellow pine lumber, 81,356 pieces yellow pine lumber for stock.

Allianca, May 5, from New York, with 3 crates castings, 15 pieces castings, 22 pieces dredge buckets, 7 cases rubber sleeves, 4 cases electrical machinery for Atlantic Division; 9 cases machinery for Pacific Division; 250 car couplers, 3 cases machinery, 4 cases glass or Mechanical Division; 12 cases coupon books for Examiner of Accounts; 16 crates ranges and boilers, 29 cases dry goods, 150 cases glassware, 8 crates beds, 11 cases drugs and sundries for Sanitary Department; 21 cases envelopes, 65 bags feed, 9 kegs nuts, 5 cases lamps, 5 cases axles and castings, 301 kegs bolts, 21 cases bolts, 46 kegs rivets, 99 barrels coal facing, 8 cases tacks, 400 rolls roofing paper, 26 cases babbitt metal for stock; and a micellaneous cargo, the whole consisting of 1,608 packages, weighing 237 tons.

Tricolor, May 6, from Mukilteo, with 2,903 pieces switch ties, 17,386 pieces Oregon pine lumber for stock; 27 pieces spud timbers for Atlantic Division; 1 piece spud timber for Pacific Division.

Origen, May 6, from New Orleans, with 991 bales hay for stock.

Clyde, May 7, from New York, with 15 cases paper for stock.

Border Knight, May 7, from New York, with 71,600 bags cement for Atlantic Division; 55,120 bags cement for Pacific Division.

Prinz Eitel Friedrich, May 7, from New York, with 200 barrels carbolic acid, 60 cases yellow ochre in Japan for stock.

Chancellor, May 10, from Liverpool, with 16 pieces dipper lips for Central Division.

Almirante, May 11, from New York, with 17 bundles brooms, 600 cases linseed oil for stock.

Abangarez, May 11, from New Orleans, with 16 barrels link pins for Pacific Division; 179 pieces castings for Mechanical Division; 3,200 pieces lumber for Panama railroad; 922 bales straw for stock.

San Mateo, May 11, from Philadephia, with 642 pieces angle reinforcements, 21 kegs bolts for Atlantic Division.

Panama, May 12, from New York, with 7 cases electrical supplies for Pacific Division; 170 kegs chlorate potash for Mechanical Division; 25 cases drugs and sundries, 25 caskets for Sanitary Department; 9 cases insulated wire, 4 cases fire hose, 30 bales air hose, 34 barrels rosin, 215 kegs bolts, 24 pieces lumber, 50 bundles handles for stock; and a miscellaneous cargo, the whole consisting of 680 packages, weighing 160 tons.

Lewis Luckenbach, May 13, from Philadelphia, with 1,000 drums gasoline for stock.

Misdirected Letters.

ANCON, C. Z., May 17, 1911.

The following insufficiently addressed letters originating in the United States and its possessions, have been received in the office of the Director of Posts, and may be secured upon request of the addressee:

LETTERR UNCALLED FOP MAY 10.

Alleyne, Julian B.
Brady, George
Bularey, N. B.
Burelle, Mrs. Bert
Case, W. L.
Cheney, John W.
Collins, Charles N.
Corson, W. M. (2d class)
Driscoll, Geo. E.
Edwards, Miss Rosetta
Fox, Eva
Friedman, Sigmund
Gardner, E. C.
Goldstein, Miss Sarah
Green, Miss Martha Jane
Hendricks, C. E.
Hille, Elec
Jansen, J. H.
Jones, Albert E. (3)
Keegan, John J.
King, John
Langesen, Thue
Little, David J.
Markham, A. V. D.
McEvers, Mrs. Rad
Murdock, J. M.
Neely, Graham R.
Newbold, George
Post, Thos. B.
Reeder, Frank
Rose Frank
Shand, C.
Tomlinson, Howard
Tracey, James
Wheatzel, Mrs. Lillie

LETTERS UNCALLED FOR MAY 17.

Alstatt, Chas.
Anderson, Mrs. Danl.
Annett, C. F.
Aughinbaugh, Mrs. Ella
Barchau, R. W.
Barram, Mrs. Romin
Berry, Carroll T.
Burrows, B C.
Clark, J. E.
Corr, Dr. J. L.
Cox, Geo. H.
Cyriacon, Constantinon
Dans, Mrs. Howard
DeMoll, T. G.
Francis, John
Friton, E.
Gates, Mrs. Ira N.
Greenwald, Max
Gross, C. W.
Herrero Dolores
Hutton, Edward
Jackson, Frank S.
Lord, Benj. G.
Mayland, Jerome
McIntosh, Mrs. Lizzie
Meek, Dr. S. E.
Mohr, Geo. H.
Neindorff, F. R.
Reed, E. A.
Seneen, Jessie M.
Sherman, Chas. W.
Shulman, Hymn
Smith, Mrs. C. J.
Stoby, Frederick
Sutherland, Alex
Willson, Fred De S.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Empire, C. Z., on Sunday, May 21, 1911, at 6 p. m. The program follows:

1 March—*Hasu*..........................Kohn
2 Selection—*Woodland*....................Luders
3 *Pilgrims' Chorus from Tannhauser* (By request)..........................Wagner
4 Overture—*Zampa*..........................Herold
5 Waltz—*The Third Degree*.................Bendix
6 Serenade—*Andalusian*.....................Bonnet
7 Popular Medley—*Amina*..................La Farge
8 Intermezzo—*Elegante from Les Contes d'Hoffman*....................Offenbach
9 March—*Bersaglieri*....................Eilenberg

CHAS. E. JENNINGS, *Musical Director.*

The next concert will be given at Gorgona on Sunday, May 28, at 6 p. m.

Sale of One Piano.

MOUNT HOPE, C. Z., May 12, 1911.

Sealed bids will be received at the office of the Depot Quartermaster, Mount Hope, C. Z., until 3 p. m., May 22, for the purchase of one C. & J. Fisher piano in stock at this depot. Bids must be plainly marked "Proposals for purchase of piano, to be opened on May 22, 1911," and addressed to the Depot Quartermaster, Mount Hope, C. Z. At the time and place above mentioned, the bids will be opened in the presence of attending bidders, the Government reserving the right to reject any or all bids. This piano may be seen and examined on any working day between the hours of 7 and 11 a. m., and 1 and 5 p. m., upon application to this office.

C. NIXON, *Depot Quartermaster.*

LOST—At Empire depot on Sunday, May 14, at about 1.37 p. m., one silver chain, lady's purse containing eight dollars, silver. Return to station agent, Empire, and receive reward.

The following vessels arrived at or departed from the port of Balboa during the week ending May 13, 1911:

Arrivals—May 8, *Ucayali*, from Callao; *Kent*, British cruiser; May 10, *Aysen*, from Valparaiso; May 11, *Challenger*, British cruiser; May 12, *Kansas City*, from San Francisco.

Departures—May 5, *Geo. W. Fenwick*, to San Francisco; May 8, *Aztec*, to San Francisco; *Guatemala*, to Valparaiso; May 11, *Chile*, to Guayaquil.

COMMISSARY DEPARTMENT.

Grape Fruit Season Ended.

CRISTOBAL, C. Z., May 10, 1911.

To All Concerned—The grape fruit season in Central America and the West Indies being at an end, there will be no grape fruit on sale in the commissary department until the next season begins, approximately the end of October.

JOHN BURKE, *Manager.*

Approved:
F. O. WHITLOCK, *Acting Subsistence Officer.*

Ice Cream on Sundays and Holidays.

CRISTOBAL, C. Z., May 10, 1911.

To All Concerned—Effective Sunday, May 21, ice cream will be placed on sale at the following commissary stores on Sundays and holidays between the hours of 12 m. and 5 p. m.:

Cristobal, Gatun, Tabernilla, San Pablo, Gorgona, Bas Obispo, Las Cascadas, Empire, Culebra, Paraiso, Pedro Miguel, Corozal, Ancon meat market, and Balboa.

Patrons will be expected to take with them the ice cream purchased. No deliveries will be made.

JOHN BURKE, *Manager.*

Approved:
F. O. WHITLOCK, *Acting Subsistence Officer.*

The hours during which commissaries are open are as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning May 17.

FRESH MEATS.

	Price.
Mutton—Stewing, per pound	6
Shoulder, neck trimmed off, (4 pounds and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg, (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing, per pound	10
Shoulder, for roasting (not under 4 pounds), per pound	12½
Chops—Shoulder, per pound	16
Chops, per pound	24
Loin for roasting, per pound	24
Cutlets, per pound	28
Pork—Loin chops or roast, per pound	14
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	8
Corned, per pound	12, 14, 16
Chuck roast (3 pounds and over), per pound	12
Pot roast, per pound	12½
Rib roast, second cut (not under 3½ pounds), per pound	16
Rib roast, first cut (not under 3 pounds), per pound	18
Sirloin roast, per pound	19
Rump roast, per pound	19
Porterhouse roast, per pound	20
Steak, chuck, per pound	12½
Round, per pound	13
Rib, per pound	18
Sirloin, per pound	19
Rump, per pound	19
Porterhouse (not less than 1½ pounds), per pound	20
Tenderloin (Western) per pound	24

MISCELLANEOUS.

Caviare, Russian, per tin	47, 89
Livers—Beef, per pound	7
Calf, each	60
Half, each	30
Sausage—Pork, per pound	†17
Bologna, per pound	10
Frankfurter, per pound	12
Lieberwurst, per pound	10
Fancy Devonshire Farm, per pound	18
Sweetbread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	23
½-dozen, only	12
Bluefish, fresh, per pound	14
Halibut, fresh, per pound	15

POULTRY AND GAME.

	Price.
Chickens—Fancy roasting, milk fed, large, each	1.25
Fancy roasting, milk fed, med., each	1.00
Fancy roasting, corn fed, about 4½ pounds, each	90
Fowls, each	60, 70, 80, 90, 1.00
Ducks, Western, about 4½ pounds, each	1.00
Long Island, each	1.30
Ducks, Long Island, each	1.10
Broilers, milk fed, each	60
corn fed, each	55
Turkeys, per pound	26
Squabs, each	35
Capons	2.10
Rabbits, dressed, each	40
Pheasants, each	50
Partridges, each	50
Grouse, each	50

CURED AND PICKLED MEATS.

Ham—German, Westphalia, per pound	36
Sugar cured, per pound	18
Sliced, per pound	20
Half, for boiling, per pound	19
Boiled, per pound	*22
Hocks, per pound	18
Picnic, Winchester, per pound	15
Bacon—Breakfast, whole piece, per pound	*22
Breakfast, sliced, per pound	*23
Beef, salt, family, per pound	9½
Pork, salt family, per pound	14
Ox Tongues each	75
Pigs' feet, per pound	9
Tongues, per pound	14
Sliced bacon in 1-pound tins, per tin	30
In 1-pound jars, per jar	30

DAIRY PRODUCTS.

Butter—Creamery special, per pound	32
Cheese—Roquefort, per pound	38
Philadelphia cream, small cake	10
large cake	18
Young America per pound	18
Swiss, per pound	26
Edam, each	1.00
Camembert, in small tins, tin	14
Neufchatel, cake	6
Gouda, per pound	34
Milk (Inspected or certified), per bottle	**25
(Pasteurized), bottle	**18
Buttermilk, bottle	**15
Ice cream, quart	‡25
½-gallon	‡50

VEGETABLES AND FRUITS.

Beets, per pound	3
Celery, per head	8
Carrots, per pound	3
Cabbage, per pound	2
Cucumbers, per pound	10
Egg plant, per pound	†10
Lettuce, per pound	10
Onions, per pound	5
Potatoes, white, per pound	2½
sweet, per pound	2
Parsnips per pound	3
Peppers green, per pound	10
Rhubarb, per pound	5
Spinach, per pound	6
Squash, per pound	6
Tomatoes, per pound	6
Turnips, per pound	3
Yams, per pound	3
Apples, fancy table, per pound	10
Grapefruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12
Pineapples, each	20
Pears, per pound	10

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*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Price of Coal.

PANAMA RAILROAD COMPANY.
OFFICE OF GENERAL SUPERINTENDENT.

Selling figures of coal effective May 1, 1911:

AT COLON.

I. C. C., on cars, lighters, tugs, barges, etc	$4.05
U. S. warships and warships of Republic of Panama, on cars	5.65
U. S. warships and warships of Republic of Panama, alongside in lighters	6.65
Other warships and steamers delivered on cars	6.40
Other warships and steamers, delivered alongside in lighters	7.40
Parties taking carload lots	6.00
Parties taking small quantities from cars or bins	7.40

AT PANAMA.

U. S. and Panamanian warships, alongside in lighters	8.40
P. M. S. S. Co., delivered to their lighters from cars	7.15
P. M. S. S. Co., on cars on dock	7.15
C-A. S. S. Co., on cars on dock	7.15
C-A. S. S. Co., lightered on P. R. R. lighters	8.15
P. S. N. Co., delivered to their lighters from cars	7.15
P. S. N. Co., on cars on dock	7.15
C. S. A. de V., on cars on dock	7.15
C. S. A. de V., lightered on P. R. R. lighters	8.15
Kosmos Line, on cars on dock	7.90
Kosmos Line, lightered on P. R. R. lighters	8.90
Other warships and irregular steamers, alongside in lighters	8.90
Parties taking carload lots	7.35
Parties taking less than one carload at a time on cars	8.90
Santo Tomas Hospital, Panama	6.00

MISCELLANEOUS.

U. S. Marine Corps, Camp Elliott	6.90

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Advance	P. R. R.	Friday	May 12
Colon	P. R. R.	Thursday	May 18
Allianca	P. R. R.	Wednesday	May 24
Panama	P. R. R.	Wednesday	May 31
Advance	P. R. R.	Tuesday	June 6
Colon	P. R. R.	Monday	June 12
Allianca	P. R. R.	Saturday	June 17
Panama	P. R. R.	Saturday	June 24
Advance	P. R. R.	Friday	June 30
Colon	P. R. R.	Friday	July 7
Allianca	P. R. R.	Thursday	July 13

CRISTOBAL TO NEW YORK.

Panama	P. R. R.	Thursday	May 18
Advance	P. R. R.	Wednesday	May 24
Colon	P. R. R.	Wednesday	May 31
Allianca	P. R. R.	Tuesday	June 6
Panama	P. R. R.	Tuesday	June 13
Advance	P. R. R.	Sunday	June 18
Colon	P. R. R.	Saturday	June 24
Allianca	P. R. R.	Friday	June 30
Panama	P. R. R.	Thursday	July 6
Advance	P. R. R.	Wednesday	July 12
Colon	P. R. R.	Wednesday	July 19
Allianca	P. R. R.	Tuesday	July 25
Panama	P. R. R.	Monday	July 31

NEW YORK TO COLON.

Santa Marta	U. F. C.	Thursday	May 11
Prinz Sigismund	H.-A.	Friday	May 12
Thames	R. M.	Saturday	May 13
Metapan	U. F. C.	Thursday	May 18
Prinz Joachim	H.-A.	Saturday	May 20
Zacapa	U. F. C.	Thursday	May 25
Prinz Eitel Friedrich	H.-A.	Friday	May 26
Trent	R. M.	Saturday	May 27
Almirante	U. F. C.	Thursday	June 1
Prinz Aug. Wilhelm	H.-A.	Saturday	June 3
Santa Marta	U. F. C.	Thursday	June 8
Prinz Sigismund	H.-A.	Friday	June 9

COLON TO NEW YORK.

Almirante	U. F. C.	Thursday	May 18
Prinz Aug. Wilhelm	H.-A.	Tuesday	May 23
Santa Marta	U. F. C.	Thursday	May 25
Prinz Sigismund	H.-A.	Saturday	May 27
Oruba	R. M.	Tuesday	May 30
Metapan	U. F. C.	Thursday	June 1
Prinz Joachim	H.-A.	Tuesday	June 6
Zacapa	U. F. C.	Thursday	June 8
Prinz Sigismund	H.-A.	Saturday	June 10
Almirante	U. F. C.	Thursday	June 15
Prinz Aug. Wilhelm	H.-A.	Tuesday	June 20
Prinz Eitel Friedrich	H.-A.	Saturday	June 24

NEW ORLEANS TO COLON.

Heredia	U. F. C.	Wednesday	May 10
Atenas	U. F. C.	Saturday	May 13
Cartago	U. F. C.	Wednesday	May 17
Turrialba	U. F. C.	Saturday	May 20
Parismina	U. F. C.	Wednesday	May 24
Abangarez	U. F. C.	Saturday	May 27
Heredia	U. F. C.	Wednesday	May 31
Atenas	U. F. C.	Saturday	June 3
Cartago	U. F. C.	Wednesday	June 7

COLON TO NEW ORLEANS.

Abangarez	U. F. C.	Thursday	May 18
Heredia†	U. F. C.	Thursday	May 18
Atenas	U. F. C.	Thursday	May 25
Cartago†	U. F. C.	Thursday	May 25
Turrialba	U. F. C.	Thursday	June 1
Parismina†	U. F. C.	Thursday	June 1
Abangarez	U. F. C.	Thursday	June 8
Heredia†	U. F. C.	Thursday	June 8
Atenas	U. F. C.	Thursday	June 15
Cartago†	U. F. C.	Thursday	June 15

The Hamburg-American steamers Prinz August Wilhelm and Prinz Joachim leave Colon for New York via Kingston and Santiago, Cuba at 10 a. m. on sailing dates.

A local run from Colon to Bocas del Toro and Port Limon will be made on Wednesday May 31; June 14 and 28.

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships designated (†) for New Orleans via Port Limon and Puerto Barrios on Thursday at 4 p. m.; ships for New York via Kingston on Thursday at 11 a. m.; for Bocas del Toro on Monday at 6 p. m.

The Leyland line steamer *Jamaican* sails for New Orleans, via Port Limon, Costa Rica, on or about May 22.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, MAY 24, 1911. No. 39.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Chairman's Report.

The report of the Chairman of the Isthmian Canal Commission for the month of April is published in full in other columns of this issue of THE CANAL RECORD. It gives a detailed account of the progress of Canal work in all departments and divisions.

Contract for the Emergency Dams.

The contract for the six emergency dams for the locks at Gatun, Pedro Miguel, and Miraflores has been let to the lowest bidder, the United States Steel Products Company at $2,238,988.40. Three bids were received. The subbidders with the contractor are the General Electric Company for the electrical machinery, and the Otis Elevator Company for the hoisting machines. A description of the dams was published in THE CANAL RECORD of March 8, 1911. The total amount of material required is about 12,000 tons. The contract calls for the material, erection, and test of the dams in place by January 1, 1913, at Gatun and Pedro Miguel, and September 1, 1913, at Miraflores.

Panama Railroad Apartment House.

Plans have been approved for the erection, by the Panama Railroad Company, of a three-story apartment house of fireproof construction on the corner of Front and Eleventh streets in Colon, replacing the one-story wooden store building, and the frame cottage, now on the premises. The drawings provide for a building made of terra cotta hollow tile, 50 feet wide by about 120 feet long, with a 9-foot passageway extending north and south through the center. The lower floor will be divided into five stores, two, each 26 by 55 feet, facing Front street, and three, each 18 by 50 feet, facing Eleventh street. The floors will be of hollow tile filled in between with reinforced concrete, covered with a thin layer of concrete, and overlaid with pine flooring. The second and third floors will rest on I-beams supported by reinforced concrete columns reaching to the roof. The stores on the first floor will have modern plate glass fronts, and all window and door casings in the building will be of metal work. The walls will be of 6-inch, and the roof of 4-inch, hollow tile, the latter to have a 2-foot coping all around. The second and third floors will be fitted up for 5-room flats, four to each floor. A veranda will surround the building on both floors, ranging in width from 12 feet on the Eleventh street side, to 10 feet on Front street, 6 feet 6 inches on Bottle alley, and eight feet on the side north.

Test of Concrete Spraying Machine.

A pneumatic spraying machine for coating surfaces with concrete mortar has been sent to the Isthmus by the General Cement Products Company, and it will be tested for a period of 30 days in coating the surface of rock in Culebra Cut, for the purpose of preventing deterioration. Much of the rock in the Cut, which is hard and firm when first excavated, crumbles rapidly on exposure to the air.

Excavation at Mindi.

Three steam shovels are at work in the excavation below sea level at Mindi, and the material dug is used for back fill at Gatun locks, or dumped on the dam. Part of the excavation which can be much more economically handled by the sluicing method is washed into a sump from which it is raised out of the excavation by three 8-inch French pumps which form part of the plant installed for keeping the pit dry. About 15,000 cubic yards have been handled by this method, and there remain about ten thousand yards more. The steam shovel work will be completed in about six months.

Long Suction Dredge Line.

Dredge No. 86, which is making the fill of Colon, is now pumping through the longest line of discharge pipe ever laid on the Isthmus, and one of the longest, without relay, of record. By actual chaining, the pipe from the dredge to the fill at Colon hospital is 7,150 feet long. The material is delivered by the 20-inch pump without a relay. The pipe is laid on level ground, and the pressure required runs up to 70 pounds.

Transfer of Equipment.

Material for the construction and maintenance of the Panama railroad telephone lines will be transferred to the Quartermaster's Department, and kept in stock at the Empire store. In addition, all repairs to telephone equipment will be made at that store, and a shop for the purpose is being installed in the space allotted to the telephone department.

The upkeep of all steam shovel repair parts at the Empire store has been assumed by the Quartermaster's Department. Heretofore, this class of material has been requisitioned by the Central Division, when required, and held in stock subject to order. Under the new plan, it will become part of the regular stock in store.

Four of the 10 Model 60 Marion steam shovels on the Isthmus have been returned to stock at Empire, there being no place where they can be used to advantage at present. Five Bucyrus shovels, employed in the Chagres section, north of Gorgona, up to the time of the suspension of work in that locality, have been hauled to the shop yard at Empire, where they will be placed in thorough repair.

Map of P. R. R. Relocation.

A large map, showing the route of the Panama railroad relocation from Mount Hope to Bas Obispo, is being made in the offices of the railroad company at Colon. It is on a scale of 400 feet to the inch, and will show all the surveys that have been made for the relocated line, and also, the two surveys for the freight line which may be built between Monte' Lirio and the Cristobal railroad yards, following as direct a line as possible, to avoid the detour into Gatun. The earliest of the surveys, as shown on this map, will be that of July, 1906.

Derrick Barges for Colon Breakwater.

Two derrick barges, to be used in placing rock in the work of facing the new breakwater at Toro Point, are under construction at the Cristobal drydock shops. The hull of one is more than 65 per cent completed, and will be finished early in June, and construction of the second has been begun.

The hull is of wooden construction, with a length over all of 96 feet, beam 42 feet, depth 8 feet 6 inches, and is divided into four single water-tight compartments. The derrick is provided with a 75-foot boom, is of the stiff-legged type, having two A-frame legs and two stiff back legs. The height to the top of the A-frame is about 48 feet. The cast iron bull wheel is 16 feet in diameter, operated by double swinging lines. A friction brake will hold the boom at any desired position along the line of its horizontal movement. The boom hoist will have a vertical movement of about three-fourths of a foot a second, and will be rigged with a seven-part line; the load hoist will have a vertical movement of about one and one-half feet a second, and will be rigged with a four-part line. The turntable, on which the derrick will revolve, is of the dredge type, will weigh about 10,000 pounds, and will be cast in six segments. The total weight of the material entering into the derrick is about 75,000 pounds.

The machinery equipment of each barge will consist of a Scotch marine boiler 11 feet 6 inches in diameter by 9 feet in length, and 125-pound pressure; a double drum hoisting engine of the Lidgerwood type, with 14 by 18-inch cylinders, and an 8 by 8-inch compound geared swinging engine, with the necessary equipment of pumps, etc. An oil-burning system will be installed in the boiler, and tank

NOTES OF PROGRESS.

(Continued.)

capacity for 2,000 gallons of oil will be provided in the hold of the vessel. The machinery will be enclosed in a wooden deck house, 27 feet wide, 30 feet long, and 16 feet high, built so that the sides can be thrown open for ventilation. Mounted on top of the deck house will be the operating room, 8 by 10 feet in size, from which point the operator will be in control of all machinery.

In operation, the derrick barges will be stationed at desired points along the breakwater. Barges, loaded with rock from the Porto Bello quarry, will be towed alongside. The derrick will lift the pieces of rock, and place them on the outer or inner side of the breakwater, as the case may be.

Sale of Old Buildings.

Fifteen of the 143 old buildings advertised for sale on competitive bid have been sold, as follows: Cristobal, house 99, W. W. Wilson, $100.50. Bohio, house 66, E. Sardi, $12; house 75, Geo. Clarke, $10. Tabernilla, houses 34 and 35 at $20.50 each; house 36, $18.50; house 37, $20.50, all to J. L. Flowers. Mamei, house 209, A. J. Pareira, $10. Whitehouse, house 161, W. H. Decker, $55. Cucaracha, houses 186, 187, 188, 189, at $50 each, all to Alex. A. Spence; house 191, Wo Kee, $55. One bid of $3,003 was received for all the buildings, but since this was only about fifty per cent of the appraised value of the buildings to the Commission the bid was not considered.

Gatun Dam Spillway.

The concrete work in the spillway of Gatun Dam is over 60 per cent completed, 135,987 cubic yards, out of a total of 225,000, having been placed at the close of work on May 20. A statement of the amount laid each day last week, and of the total in place, follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
May 15	116	5:00	1
May 16	164	7:00	1
May 17	152	8:00	1
May 18	148	8:00	1
May 19	88	6:30	1
May 20	108	8:00	1
Total	776	42:30	1
Previously reported	135,211		
Grand total	135,987		

Ancon Crusher.

A statement of the rock crushed at Ancon quarry during the week ending May 20, follows:

DATE.	Hours worked.	Cubic Yards.
May 15	7:50	2,829
May 16	6:50	2,368
May 17	6:00	2,179
May 18	6:45	2,570
May 19	7:30	2,578
May 20	7:00	2,320
Total	41:55	14,844

A contract for 230,000 feet of long leaf yellow pine cross-ties has been let to William P. Cook & Company of New York at 78.8 cents a tie.

Transients at Washington Hotel.

The ground floor of the Bennington House, which adjoins the Washington Hotel at Colon, has been turned into rooms for transient guests. It contains ten rooms and two baths. The Bennington now has twenty-two rooms, with beds for from 35 to 40 people, for which a charge of from $2 to $3 a day is made for one person in a room, and from $4 to $6 a day for two persons. A monthly rate is made to employes of the Commission or Panama Railroad of $30 for one person, and $45 for two; for transients, $45 for one person, and $60 for two. Nonemployes who occupy a room regularly will be given a rate of $30 a month for the regular meals at the Washington Hotel.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

About 65 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of work on May 20, being 1,352,928 cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending May 20, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours. The small output for the past week is accounted for by the fact that slides at the north end of the lower lock prevented the moving of the steel forming into that lock.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
May 15	1,266	24:36	6	644	9:40	2	161¼	2,071¼
May 16	1,822	34:55	6	610	9:40	2	265	2,697
May 17	1,768	29:36	6	558	7:30	2	249	2,575
May 18	1,846	33:00	6	604	7:35	2	241¼	2,691¼
May 19	1,496	27:56	6	424	7:40	2	151¾	2,071¾
May 20	1,214	21:52	6	100	2:40	2	114⅓	1,428⅓
*Portable mixers				436⅓				436⅓
Total	9,412	171:55	6	3,376⅓	44:45	2	1,183	13,971⅓
Previously reported								1,338,957
Grand total								1,352,928⅓

*The 436⅓ yards shown for the portable mixers are reinforced concrete, and were placed on the following days; May 15th, 58⅓ yards; May 16th, 37⅓ yards; May 17th, 59 yards; May 18th, 99 yards; May 19th, 82 yards; May 20th, 100⅔ yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is about 78 per cent completed, 651,080 cubic yards, out of a total of 837,400 having been placed at the close of work on May 20. The record for each of the six eight-hour working days of last week, follows.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT.						Large stone.	Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
May 15	242	6.00	2	384	4.50	1	19	2.00	1		645
May 16	236	6.00	2	340	6.00	1	51	6.00	1		627
May 17	338	6.00	1	180	4.00	1	72	8.50	1		590
May 18	68	4.50	1	410	6.00	1					478
May 19	138	6.00	2	466	9.00	2					604
May 20				488	11.00	2	20	2.00	1		508
Total	1,022	28.50	1.33	2,268	40.50	1.33	162	18.50	.67		3,452
Previously reported										4,187	647,628
Grand Total										4,187	651,080

MIRAFLORES LOCKS.

About 18 per cent of the concrete for the system of two twin locks at Miraflores was in place on May 20, the total amount on that date being 244,936 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT.							Total.
				2-cubic yard mixers.			⅓-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
May 15	1,264	23.17	4	200	4.00	2	322	18.00	3		1,842
May 16	1,060	23.67	4	112	3.00	2	382	19.00	3		1,617
May 17	1,124	20.17	4	144	6.00	2	379	20.50	3		1,672
May 18	1,272	20.58	4	174	15.00	2	412	21.50	5		1,939
May 19	668	10.25	4	192	14.00	2	559	33.25	5		1,471
May 20	1,028	17.17	4	208	16.00	2	490	26.00	5		1,759
Total	6,416	115 01	4	1,030	58.00	2	2,544	138.25	4		10,300
Previously reported										3,693	234,636
Grand Total										3,693	244,936

*The 310 yards were mixed by a ⅓-yard mixer, the amounts for each day being: May 15th, 56 yards; May 16th, 63 yards, May 17th, 25 yards; May 18th, 81 yards; May 19th, 52 yards; May 20th. 33 yards.

EXECUTIVE ORDER

Relating to the Arrest and Discharge of Deserting Seamen.

By virtue of the authority vested in me, I hereby establish the following Order for the Canal Zone:

1. If any seaman who shall have signed a contract to perform a voyage shall absent himself from an American vessel at any port or place in the Canal Zone, without leave of the master, or officer commanding in the absence of the master, such master or the Collector of Revenues or his deputy acting as the Shipping Commissioner may make complaint against such absent seaman to the judge of any Circuit Court of the Canal Zone, who, thereupon, shall issue his warrant against the seaman complained of, in order that he may be brought before him to answer the complaint; and, after a hearing before said judge, if it shall appear that the seaman had signed a contract to perform a voyage on the vessel and that the voyage agreed for is not finished or altered, or that the contract was not otherwise dissolved, and that such seaman has deserted the vessel, or absented himself therefrom without leave, the judge shall commit him to jail to remain there until the vessel shall be ready to proceed on her voyage, or until the master shall require his discharge, and then to be delivered to the master, the latter paying all the costs of such commitment which may be deducted by him from the wages due to such seaman.

2. If it shall appear on the hearing hereinbefore provided for that the voyage of the vessel is continued contrary to agreement, or that the vessel is badly provisioned, or unseaworthy, or that the officers of the ship have been guilty of cruel treatment toward the seaman, he shall be discharged and the judge shall require the master to pay such seaman one month's wages over and above the wages due at the time of discharge, and to provide him with adequate employment on board some other vessel, or provide him with a passage on board some other vessel bound to the port from which he was originally shipped, or to the most convenient port of entry in the United States, or to a port agreed to by the seaman, and the seaman shall have a lien on the vessel to compel compliance with the order of the judge, who shall have authority to issue all writs necessary to enforce his jurisdiction; and the judge shall cause to be entered upon the crew list and shipping articles and official log the cause of discharge and the particulars in which the cruel or unusual treatment consisted, and shall cause his name to be subscribed thereto officially, and shall cause the entry made in the official log to be read to the master. The latter's reply thereto, if any, shall likewise be caused to be entered and subscribed in the same manner.

3. If any consul or vice-consul of any foreign government, who is commissioned to the government of the Republic of Panama and is recognized by the United States in the Canal Zone, such foreign government having a treaty with the United States, or with the Republic of Panama, stipulating for the restoration of seamen deserting, shall make application in writing stating that the person therein named has deserted from a vessel of any such government while in any port of the Canal Zone, and shall furnish proof by the exhibition of the register of the vessel, ship's roll, or other official document, that the person named belonged, at the time of the desertion, to the crew of such vessel, it shall be the duty of any judge of any Circuit Court of the Canal Zone, to issue warrants to cause such person to be arrested for examination. If, on examination, the facts stated are found to be true, the person arrested, not being a citizen of the United States, or of the Republic of Panama, shall be delivered up to the consul or vice-consul, to be sent back to the dominions of any such government, or, on the request and at the expense of the consul or vice-consul, shall be detained until the consul or vice-consul finds an opportunity to send him back to the dominions of any such government. No person so arrested shall be detained more than two months after his arrest, but at the end of that time shall be set at liberty, and shall not be again molested for the same cause. If any such deserter shall be found to have committed any crime or offense, his surrender may be delayed until the tribunal before which the case shall be pending, or may be cognizable, shall have pronounced its sentence, and such sentence shall have been carried into effect.

4. This Order shall take effect from and after this date. WM. H. TAFT.

THE WHITE HOUSE, *May 6, 1911.*

[No. 1348.]

ORDINANCE

Prohibiting Hunting and Other Trespassing Upon Reservoirs and Watersheds of the Canal Zone.

Be it ordained by the Isthmian Canal Commission:

Section 1. It shall be unlawful for any person to hunt on any of the reservoirs of the Canal Zone, from which water is drawn for the use of the inhabitants of any city, municipality, district or settlement or on any of the established watersheds of any such reservoirs; and no person except under authority of the Isthmian Canal Commission or the Panama Railroad Company, shall enter upon any of said reservoirs or watersheds for any purpose.

Section 2. Any person who violates any of the provisions of this ordinance shall be deemed guilty of a misdemeanor, and shall be punished as prescribed by Section 16 of the Penal Code.

Section 3. This ordinance shall take effect 30 days after its approval by the Secretary of War.

Respectfully,

GEO. W. GOETHALS, *Chairman.*

Approved: J. M. DICKINSON,
Secretary of War.

April 26, 1911.

Mosquito Pests.

Concerning the unusual number of mosquitoes infesting the Canal Zone at the present time, a report has been made to the Sanitary Department by Mr. A. H. Jennings, Entomologist, which contains, among others, the following statements:

The great bulk of these mosquitoes are of a very widely distributed and annoying species *Aedes taeniorhynchus* of Weidman. The species is not infrequently mistaken for *Stegomyia*, to which it has a superficial resemblance, being dark in color with white banded abdomen and legs.

Its eggs are laid upon the mud at the margin of ponds and marshes, or at the bottom of puddles from which the water has evaporated. They must become dry before hatching, and in this condition retain their vitality for months. The first rains cause the eggs to hatch, and successive rains at short intervals develop the larvæ into enormous numbers of viciously biting mosquitoes. The ordinary methods of control are manifestly inadequate to suppress breeding under such conditions. Clearing away of brush in the neighborhood of settlements is the only effective method of preventing this phase in the breeding of the species, but as this mosquito is capable of prolonged flight and its invasions here usually of limited duration, the clearing of such areas, as would in most cases be necessary, is not justified.

The activity of this mosquito in past seasons has been confined to about two months, including the latter part of April and extending into June. The unusual number this year is attributed to the very favorable conditions created by the very intense dry season ending somewhat abruptly in regularly recurring rains. So far as medical knowledge goes, this mosquito is not a transmitter of disease.

Masonic Temple Corner Stone Laying.

The corner stone of the new Masonic Temple at the corner of Eleventh and Bolivar streets, Cristobal, will be laid on May 30, at 2 p. m. A special train will cross the Isthmus for the convenience of Masons and their friends. The schedule is, as follows: Leave Panama, 11 a. m.; Corozal, 11:07; Pedro Miguel, 11:18; Paraiso Junction, 11:21; Culebra, 11:24; Empire, 11:40; Las Cascadas, 11:46; Bas Obispo, 11:51; Gorgona, 12.02 p. m.; San Pablo, 12:12; Tabernilla, 12:18; Bohio, 12:30; Gatun, 12:47; arrive Colon, 1 p. m.

Tickets will be necessary for transportation on this train, and can be secured from members of Sojourners Lodge. or from the committee. Masons will meet at the lodge room, Fifth and Bolivar streets, at 1.30 p. m., and march to the building, headed by the U. S. Marine Band.

Observance of Memorial Day.

Empire Company, No. 2, U. R. K. of P., will turn out on Decoration Day, May 30, to observe with fitting ceremony the day set aside for the purpose of paying tribute to our dead. We also invite any member of the Uniform Rank on the Isthmus to participate with us.

Fraternally yours,

C. PETERS, *Recording Sergeant.*

Empire, C. Z., May 15, 1911.

Chaplain C. O. Purdy, U. S. W. V., will conduct Memorial Day services in Gatun chapel, Sunday evening, May 28, at 7:45 p. m. The United Spanish War Veterans will attend in a body. The public is invited.

S. A. CLARK, *Adjutant.*

Gatun, C. Z., May 20, 1911.

A special train will leave Panama at 7:30 a. m., on Sunday, May 28, for the benefit of those wishing to attend the memorial services to be held at Mount Hope cemetery. The same train will return about 12 noon, or later. All Americans are invited to attend.

Notice to Haymakers.

There will be a convocation of Chiriqui Hayloft, No. 1½, at Culebra, on Saturday, May 27, at 8 o'clock. All members in good standing, and visiting companions, are invited. Business of importance will be transacted.

By order of THOS. J. WALSH, *Col. of S.*

Gorgona, C. Z., May 22, 1911.

CANAL WORK IN APRIL.

Monthly Report of the Chairman and Chief Engineer to the Secretary of War.

CULEBRA, C. Z., May 15, 1911.

The Honorable the Secretary of War,
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of April, 1911:

Department of Construction and Engineering.

The following table summarizes the principal items of construction work accomplished by the Atlantic, Central, and Pacific Divisions during the month:

ITEM.	Unit.	Atlantic.	Central.	Pacific.	Total.
Work excavation, dry	Cubic yards	86,578	1,489,471	125,870	1,701,919
Work excavation, wet	Cubic yards	492,579	26,968	439,622	959,169
Total work excavation	Cubic yards	579,157	1,516,439	565,492	2,661,088
Plant excavation, dry	Cubic yards	....	....	....	....
Plant excavation, wet	Cubic yards	21,239	....	9,426	30,665
Total plant excavation	Cubic yards	21,239	....	9,426	30.665
Total Canal excavation	Cubic yards	600,396	1,516,439	574,918	2,691,753
Material placed in dams	Cubic yards	573,788	....	81,360	655,148
Concrete placed in locks and dams	Cubic yards	71,530	....	67,393	138,923
Explosives used	Tons (Gross)	76.05	265,39	30.94	372.38
Rock drilled	Feet	59,596	420,899	71,377	551,872
Tracks removed	Miles	....	26.13	....	26.13
New tracks laid	Miles	3.70	15.78	3.91	23.39
Rock crushed	Cubic yards	68,746	....	49,371	118,117
Cement used	Barrels	82,036 50	358	69,120	151,514.50
New roads built	Miles	1.53	....	0.04	1.57
Water mains laid	Feet	162	1,152	3,391	4,705
Sewers laid	Feet	....	1,003	....	1,003
Open drains and ditches dug	Feet	....	2,200	2,250	4,450
Average daily force	....	7,696	8,272	4,414	20,382
Average rainfall	Inches	4.72	4.52	6.31	4.85

Atlantic Division.

GATUN LOCKS.

Shovel excavation during the month was continued in the lower lock and outside the Canal prism for the purpose of obtaining impervious material for back fill. A total of 38,993 cubic yards of material was removed. Of this amount, 15,807 cubic yards were excavated outside the prism for back fill. On April 30 the total excavation amounted to 5,830,068 cubic yards, of which 5,009,924 cubic yards were removed from the prism. The shovel excavation in the locks was 99 per cent completed; the channel excavation 96 per cent completed, and the excavation of the culvert trenches by crane 80 per cent completed.

Back Fill—Back filling behind the walls of the upper and middle locks was continued. The quantity placed during April aggregated 77,880 cubic yards, increasing the total to 424,455 cubic yards. On April 30 the back fill was 34.94 per cent completed.

Receiving and Issuing Material—The receipts of all material during the month were satisfactory, and exceeded the consumption.

Mixing and Placing Plants—Both plants, and all portable mixers, were kept in satisfactory operation during the month.

Power Plant and Pumps—The operation of the power plant and pumps was satisfactory and economical.

Iron and Steel Work—During the month, the setting of steel for Stoney gate valves and hollow quoins was continued. A total of 254 tons of fixed steel, exclusive of reinforcement, was placed.

Concrete Work—There was a decrease of 19,523 cubic yards in the amount of concrete laid, as compared with the figures for the preceding month. The daily average for the 24 working days was 2,800 cubic yards, as compared with a daily average during March of 3,218 cubic yards. The total amount of concrete placed during the month was 67,361 cubic yards, including 3,734¾ cubic yards of large stone. The bucket measurement exceeded the place measurement by 220¾ cubic yards. Of the total concrete, 3,868½ cubic yards were placed in the upper lock, 26,005½ cubic yards in the middle lock, and 37,487 cubic yards in the lower lock. The concrete work for the entire lock system was 62.44 per cent completed at the end of April.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS, GATUN LOCKS.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)	12.03	8.50
Average number of hours per day worked per strand of cableway laying concrete and large stone (actual working time)	7.10	....
Average number of mixers per day	6.00	2.00
Average hourly output per mixer, (actual working time) cu. yds.	59.55	63.00
Average amount of concrete and large stone laid per hour, per strand of cableway, (actual working time) cu. yds.	34.61	....
Large stone laid, cu. yds.	3,025¾	709
Concrete laid, cableways, cu. yds.	44,346	....
Concrete laid, through chute into dump cars, cu. yds.	5,466	7,444
Concrete laid, derricks, cu. yds.	....	4,930
Concrete laid, portable mixers	....	1,661
Total amount concrete and large stone laid, cu. yds.	52,837¾	14,744

Concrete from the auxiliary plant was placed by five derricks, and through the chute on the east bank of the lower lock into dump cars below.

GATUN DAM.

Construction during the month increased the total fill, as determined by cross sections of the material in place, by 575,788 cubic yards, making the total amount in place 13,447,713 cubic yards.

Hydraulic Fill—The dredges increased the hydraulic fill by 368,658 cubic yards. The total hydraulic fill in place on April 30 was 7,002,418 cubic yards.

Dry Fill—The material received from the Central Division, the locks, and steam shovels Nos. 51 and 134, amounting to 205,130 cubic yards, was placed on the north and south toes of the dam, east and west of the spillway, making the total dry fill in place 6,445,295 cubic yards.

GATUN SPILLWAY.

Excavation—In preparing foundation of the spillway dam, 1,013 cubic yards of rock were excavated by steam shovel No. 134, 400 cubic yards by hand, and 365 cubic yards by derrick, increasing the total spillway excavation to 1,580,794 cubic yards.

Concrete—Construction work on the spillway dam was continued. Concrete was placed behind the east coffer dam, the coffer dam itself being extended to balanced valve pier, and 300 cubic yards of earth were placed in the coffer dam. The amount of concrete placed during the month aggregated 4,169 cubic yards, which increased the total to 135,260 cubic yards. The concrete work for the spillway was 60.2 per cent completed.

HARBOR AND CHANNEL SECTION.

Excavation Below Sea Level at Mindi—During the month, three steam shovels removed 9,235 cubic yards of earth and 59,445 cubic yards of rock from the Canal prism. In addition, 5,350 cubic yards of earth were sluiced by pumping plant.

Dredging from the Ocean to Mindi—Five dredges removed 443,625 cubic yards of earth and 34,549 cubic yards of rock from the Canal prism. In addition, the dredge *Mindi* removed 21,239 cubic yards of earth in Cristobal harbor, and 5,414 cubic yards of earth and 2,247 cubic yards of rock in the drydock slip. On April 30th, 40 feet of water could be carried from zero to zero plus 2,100 feet; 35 feet to mile 3 plus 100 feet; 30 feet to mile 4 plus 450 feet; 20 feet to mile 5 plus 2,438.9 feet, at the junction with the French canal.

Dredging from Mindi to Gatun Locks—The dredge *Sandpiper* removed 33,359 cubic yards of fill which had accumulated in the Canal prism.

PORTO BELLO.

PERFORMANCE OF ROCK CRUSHER PLANT.

Length of working days—hours From 1st to 30th, inclusive	8.00
Average number of hours worked per day	6.80
Average number of cubic yards per hour of working day	358.10
Average number of cubic yards per working hour	421.30
Maximum day's output, (7 hours 15 minutes) cu. yds	3,726.00
Average day's output (24 days) cu. yds.	2,864.00
Average hourly output, (191 bours 7 minutes) cu. yds.	359.00
Total output for the month, cu. yds.	68,746.00

SAND, STONE, AND CEMENT SERVICE.

In connection with this service, plant steamed 11,225 miles, handled 797 barges, and carried 3,810 passengers.

TORO POINT.

Colon Breakwater—Forty-five thousand one hundred and thirty-two cubic yards of material were excavated, of which amount 4,433 cubic yards were placed in track fill, and 40,699 cubic yards in breakwater fill. The double track trestle was extended 616 linear feet. On April 30, the trestle extended 4,214 feet from shore. The total amount of rock dredged and dumped on the west breakwater to April 1, 1911, was 519,393 cubic yards. During the month, 36,796 cubic yards were dredged and dumped, increasing the total to 556,189 cubic yards. The amount of dry fill placed to May 1 was 271,401 cubic yards.

NOMBRE DE DIOS.

During the month, 99 barges, containing 47,801 cubic yards of sand, were shipped to Gatun.

MUNICIPAL ENGINEERING.

The reservoirs, water mains, sewers, roads, and oil pipe lines were maintained and extended as required to facilitate construction work. Work was continued on the Colon municipal improvements.

Central Division.

During the month of April the total amount of material excavated in the Central Division was 1,516,439 cubic yards, of which 271,650 cubic yards were classified as earth and 1,244,789 cubic yards as rock. Of this quantity, 1,470,752 cubic yards were removed by steam shovels, 2,788 cubic yards by scraper, 8,956 cubic yards by bucket cranes, and 2,543 cubic yards by hand. Contractors removed 26,968 cubic yards by sluicing, and 4,432 cubic yards by hand. Of the total, 1,497,147 cubic yards consisted of primary excavation for the Canal prism, 10,336 cubic yards permanent diversion useful after the Canal is completed, and 8,956 cubic yards of silt deposited in completed sections of prism. The total work excavation amounted to 1,516,439 cubic yards. Owing to the completion of steam shovel work in the Chagres section, the total output for the Central Division for the month was not so great as in April, 1910, but the output from the Culebra section, 1,414,336 cubic yards, was the highest record in that section for the month of April, the previous high record for the month having been in April, 1909, when 1,291,844 cubic yards were excavated.

The daily average number of steam shovels at work during the month was 44.71, and the total number of shovel days was 1,073, as compared with 50.63 shovels at work during the month of March, with 1,367 shovel days.

For comparison with the work done by steam shovels during the corresponding month of the previous year, the following table has been prepared:

Period.	Excavated by shovels.	Classification of material.		Av. No. of shovels at work.	W'kg days.	Av. yards per shovel day.
		Rock.	Earth.			
1910:	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*			*C. Y.*
April..	1,685,030	1,161,391	523,639	50 04	26	1,295 2
1911:						
April..	1,470,752	1,227,485	243,267	44.71	24	1,370.7

Rainfall at Empire: 1910, 4.24 ins.; 1911, 3.93 ins.

The above table shows the average output per shovel to be 5.83 per cent greater in April 1911, than in the corresponding month of the previous year.

The total amount of material excavated from the prism in the Culebra section of the Central Division in April, 1911—1,404,000 cubic yards—was the highest record in that section for the month of April, the previous high record for the month having been in April, 1910, when 1,288,845 cubic yards were removed.

The total estimated amount of material to be removed in the Central Division was 97,125,018 cubic yards, and up to May 1, 1911, 74,576,048 cubic yards had been removed, leaving 22,548,970 cubic yards to be removed, in order to complete all excavation in the Central Division. From these figures it will be seen that 76.78 per cent of all excavation in the Central Division had been completed up to the close of the month of April, and 23.22 per cent remained uncompleted.

Considering the two sections which compose the Central Division, the excavation completed and that to be completed at the close of April operations was, as follows:

CULEBRA SECTION.	*Cu. Yds.*
Completed	62,814,749
To be completed	21,371,975
CHAGRES SECTION.	
Completed	11,761,299
To be completed	1,176,995

From the above figures it will be seen that the Culebra section, locally known as the "Culebra Cut," was 74.61 per cent completed, with 25.39 per cent to be completed; the Chagres section was 90.91 per cent completed, with 9.09 per cent to be completed.

During the month, 41 800 cubic yards of material were hauled from the Canal prism and dumped in the embankment for the roadbed of the relocated Panama railroad on the Gold Hill line, and 22,743 cubic yards south of Caimito. The total amount of spoil from the Central Division used for this purpose at the close of the month was 3,828,037 cubic yards. The Central Division also delivered at Gatun 208,067 cubic yards of rock and earth for use in the construction of the dam, making the total for this purpose at the end of April 3,355,867 cubic yards. In addition, the Central Division delivered 2,793 cubic yards of rock and earth to the Pacific Division to be used as back fill for the lock at Pedro Miguel, increasing the total for this purpose to 30,533 cubic yards. There were also 1,050 cubic yards of rock and earth transported to Colon to be used by the Panama railroad in building a new sea wall.

The daily average number of laborers at work on the whole division during the month was 7,418, and the daily average number of gold employes 854.

Pacific Division.

DISTRICT NO. 1—LOCKS AND DAMS.

Excavation—The total excavation during the month amounted to 125,870 cubic yards.

Filling and Embankment—During April, no additional dry filling was added to the prism of the west dam at Pedro Miguel, the total amount of material in place at the close of the month remaining at 260,852 cubic yards, as previously reported. The back fill at Pedro Miguel was increased by 61,379 cubic yards, the total in place at the end of the month amounting to 250,034 cubic yards.

At Miraflores, 67,260 cubic yards were added to the dry fill in the toes, and 14,100 cubic yards to the hydraulic fill in the core of the west dam, making the totals at the end of the month 758,152 cubic yards, and 510,521 cubic yards, respectively. The back fill was increased by 6,540 cubic yards, increasing the total to 142,425 cubic yards.

PEDRO MIGUEL LOCKS.

The back filling of the east and west walls was continued. The dismantling of berm crane "G" was completed, and the tower and boom arm were erected at Miraflores. The 2-cubic yard auxiliary concrete mixer located in the east storage trestle was moved and erected beside the one in the west storage trestle, and the east trestle taken out to make room for a drainage channel from the Culebra Cut to the middle wall culvert of the locks. During the month, the amount of iron placed aggregated 521,834 pounds.

Concrete Work—The total amount of concrete and large stone laid at Pedro Miguel was 28,635 cubic yards, as compared with 44,716 cubic yards during March. The concrete was placed, as follows: 11,833 cubic yards in the west wall; 739 cubic yards in the west head wall; 9,543 cubic yards in the center wall, and 6,520 cubic yards in the east wall.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT PEDRO MIGUEL.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)...	8.00	8.00
Average number of hours per day, worked laying concrete and large stone (actual working time)........	4.75	6.55
Average number of mixers per day........	2.00	3.50
Average hourly output per mixer (actual working time)........	*Cu. Yds.* 54.78	*Cu. Yds.* 27.96
Average amount of concrete and large stone laid per hour, per chamber crane (actual working time)........	53.68	....
Large stone laid........	....	....
Concrete laid........	20,900.00	7,735.00
Total concrete laid..........	20,900.00	7,735.00

Auxiliary plant consisted of three 2-cubic yard mixers and one ½-yard mixer. Placing plant consisted of locomotive cranes and derricks, averaging 1.25 units a day, and ½-cubic yard mixer dumping directly into forms.

MIRAFLORES LOCKS.

The dry excavation in the lower lock was continued by six steam shovels, and the excavation of the sump pit for draining the lock site was commenced. Back filling behind the east wall was started preparatory to laying material tracks to auxiliary mixing plant which will be installed in east side wall near lower end of upper lock. Filling was continued in the east and west toes of the west dam. During the month, the amount of iron placed aggregated 118,409 pounds.

Concrete Work—The total amount of concrete and large stone laid was 67,393 cubic yards, as compared with 31,173 cubic yards during March. The concrete was placed, as follows: 14,989 cubic yards in the east wall; 2,967 cubic yards in the center wall; 18,435 cubic yards in the west wall, and 2,367 cubic yards in the floors.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT MIRAFLORES.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)..	8.00	8.00
Average number of hours per day worked laying concrete and large stone (actual working time)........	6.25	7.15
Average number of mixers per day........	3.50	8.75
Average hourly output per mixer (actual working time)........	*Cu. Yds.* 35.41	*Cu. Yds.* 18.09
Average amount of concrete and large stone laid per hour per berm or chamber crane (actual working time)........	60.30	....
Large stone laid........	....	....
Concrete laid........	15,829.00	22,929.00
Total concrete laid..........	15.829.00	22.929 00

Permanent plant consisted of one berm crane for four days, and two berm cranes for 19 days.

Auxiliary plant consisted of two 2-cubic yard mixers: and seven ½-cubic yard, and one ¼-cubic yard mixers, averaging 5.15 mixers a day.

DISTRICT NO. 2—DREDGING.

The following is a statement of the output of the five dredges which were in operation during the month, and of the amount of material excavated hydraulically:

DREDGE.	Type.	WORK.		PLANT.		Total.	Remarks.
		Earth.	Rock.	Earth.	Rock.		
		Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*	
Cardenas........	Dipper....	34,474	15,487	....	....	49,961	Place measurement
Marmot........	Ladder....	64,251	....	....	....	64,251	Place measurement
Mole........	Ladder....	19,470	5,076	....	....	24,546	Place measurement
Badger........	Ladder....	90,834	....	....	....	90,834	Place measurement
Culebra........	Suction....	176,521	....	9,426	....	185,947	Scow measurement
Total........	....	385,550	20,563	9,426	....	415,539	
Hydraulic excavation.....	....	*33,509	....	....	....	33,509	Place measurement
Grand Total........	....	419,059	20,563	9,426	....	449,048	

*Excavated from Canal prism, south of Miraflores lock site.

CHAMÉ SAND EXCAVATION.

Approximately 40,400 cubic yards of sand were excavated at Punta Chamé and delivered at Balboa.

DISTRICT NO. 3—MUNICIPAL AND SANITARY ENGINEERING.

Cocoli Lake Pump—The 8-inch motor-driven centrifugal pump installed on the west side of the Miraflores west dam for the purpose of removing as much as possible the salt water which leaked through the west dam into Cocoli Lake, was operated 10 hours a day for the first 11 days of the month, and 24 hours a day for the remainder of the month. This pump draws water from a point 22 feet below the surface of the lake and discharges at the rate of 2,500 gallons a minute, or approximately 74,762,500 gallons for the month. The first six days of the month the percentage of chlorine in the discharge pipe of this pump was reduced from 1,950 to 1,750 parts per million; from that time to April 25, it was reduced from 1,750 to 1,550 parts per million.

The reservoirs, water mains, sewers, roads, and oil pipe lines were maintained and extended as required to facilitate construction work. Work was continued on the municipal improvements in the city of Panama.

DISTRICT NO. 4—ANCON QUARRY.

PERFORMANCE OF ROCK CRUSHER PLANT.

	Hours.
Length of working day	9.00
Average number of hours per day (actual working time)	6.37
Average amount crushed per hour of working day	*C. Y.* 219.43
Average amount crushed per working hour	322.71
Total output for the month	49,371.00

The 12-hour shift at Ancon quarry was discontinued at the beginning of the month, and the crusher is now being operated nine hours a day. The crusher was shut down on April 10 and 11 on account of the babbiting of the eccentric on the large crusher becoming worn, which caused the bearing to run hot, and it became necessary to put in a new eccentric. The eccentric removed at this time had been in the crusher since it was first installed, and had been continually in use, crushing approximately 900,000 cubic yards of rock.

Relocation of Panama Railroad.

During the month, 414,130 cubic yards of material were excavated, increasing the total excavation at the close of the month to 6,685,624 cubic yards, and 488,640 cubic yards of material were placed in embankment, increasing the total for this purpose to 12,240,578 cubic yards.

The average daily number of steam shovels at work was 8.83, and the total number of working days 24.

For comparison with the work done by steam shovels during the preceding month, and during the corresponding month of the previous year, the following table has been prepared:

Period.	Excavated by shovels.	Classification of material.		Av. No. of shovels at work.	W'kg days.	Av. yards per shovel day.
		Rock.	Earth.			
1910:	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*			
April..	212,097	82,295	129,802	7.15	26	1,140
1911:						
March.	325.295	250,505	74,790	7.04	27	1,712
April..	366,194	205,731	160,463	8.83	24	1.727

During the month, 2,452 feet of temporary trestle were driven, and work on bridges and culverts was continued. Nine thousand three hundred and seventy-two linear feet of 70-pound track were relaid by 90-pound track, the total of 70-pound and 90-pound track at the end of the month being 148,372 linear feet, and 28,369 linear feet, respectively. The force averaged 2,232 men, in addition to those employed by contractors.

Quartermaster's Department.

Labor—There was some shortage of unskilled labor during the month and few applications for employment from either Spaniards or negroes. Although a number of laborers were released by the Central Divison in the Chagres district, they were apparently not sufficient to supply the demand. The Panama railroad and the Depot Quartermaster reported shortage of labor on the docks at Colon, and the storekeepers along the line found it difficult to secure unskilled labor. Requests were also received for additional laborers for the relocation of the Panama railroad.

Quarters—Employes of the Central Division were transferred from the Tabernilla-San Pablo district, and bachelor quarters at those points assigned as nonhousekeeping quarters to a number of families. The Central Division also made arrangements to transfer its employes from Gorgona, which will enable some of the men employed in the shops to obtain quarters at that place. The removal of certain buildings at Culebra necessitated the transfer of about 20 families to Tabernilla, Empire, and Paraiso. The number of laborers occupying Commission quarters showed a decrease of over 700.

Material and Supplies—During the month, the dredge store house operated by the Atlantic Division was transferred to the jurisdiction of the Quartermaster's Department, the value of material transferred amounting to $42,000.

Supplies during the month were delivered by 28 steamers, the total weight of cargo aggregating 39,818 tons, exclusive of 41,800 cross-ties and 137,189 feet, board measure, of yellow pine lumber. The total value of material received during the month was $838.039.56.

Subsistence Department.

The operation of the European laborers' messes, the colored laborers' kitchens, and the line hotels, showed a net profit of $1,992.95. The operation of the Hotel Tivoli showed a net profit of $2,246.15, and there was a net profit on restaurants, penitentiary, tugs, and dredges of $135.95. The net profit on subsistence operations was $4,375.05.

Department of Civil Administration.

COURTS.

During the month, 69 civil and 38 criminal cases were diposed of in the Circuit Courts, and 51 civil and 491 criminal cases in the District Courts.

DIVISION OF POSTS, CUSTOMS, AND REVENUES.

Money order sales for April amounted to $450,472.57, and the fees to $1,976.87. Receipts from stamp and card sales, and newspaper postage aggregated $6,051.10. The total collection of revenues made by the division was $18,777.61, and the collection on account of court fines, costs and fees, $2,520.66.

Twenty-six vessels entered at and 24 vessels cleared from the port of Ancon; and 22 vessels entered at and 24 vessels cleared from the port of Cristobal.

DIVISION OF POLICE AND PRISONS.

The total number of persons arrested was 526, of whom 499 were men and 27 women. Fifty-one nationalities were represented. The total number of arrests for the month was an increase of 84, as compared with March. Thirteen convicts were committed to the penitentiary, and seven were discharged, leaving 143 in confinement at the close of the month. The cost of guarding and subsisting the convicts was $2,533.55, and the value of their work on the Canal Zone roads was $2,053.40.

DIVISION OF FIRE PROTECTION.

Nineteen fires were reported in the Canal Zone during the month, as compared with 84 in March. The damage to Commission property was $47, and to private property $210.

DIVISION OF PUBLIC WORKS.

In the city of Panama the average daily consumption of water was 1,274,016 gallons, and in Colon 833,633 gallons.

The usual inspection and maintenance work of this division was performed during the month.

DIVISION OF SCHOOLS.

The total enrollment in the white schools during the month was 1,091, and the average daily attendance 840.1, or 77 per cent of the enrollment; and in the colored schools the total enrollment was 1,466, and the average daily attendance 508.1 or 35 per cent. Forty-two white, and 25 colored teachers were employed in the division on April 30.

Department of Sanitation.

The total number of deaths from all causes among employes was 38. These were divided, as follows: From disease, 26, and from violence 12, giving the annual average per thousand of 6.42 and 2.96, respectively.

The annual average death rate per thousand among employes for the month of April in previous years since American occupation was, as follows:

1905	10.95
1906	30.00
1907	38.67
1908	7.77
1909	8.57
1910	13.04

The annual average death rate per thousand in the cities of Panama, Colon, and the Canal Zone, including both employes and nonemployes, was 17.74.

The annual average death rate per thousand for the month of April among the same class of population for previous years was, as follows:

1905	39.29
1906	39.06
1907	40.97
1908	20.04
1909	16.77
1910	19.73

Segregating the whites from the blacks, the annual average death rate per thousand from disease among employes was: For whites, 2.85; blacks, 7.67, giving a general average of 6.42. For the same month during 1909, the annual average death rate per thousand from disease was: Whites, 6.65; blacks, 7.15, giving a general average of 7.01, and for the same month during 1910: Whites, 4.48; blacks, 9.97, giving a general average of 8.62.

Among employes during the month, deaths from the principal diseases were, as follows: Chronic nephritis, 3; dysentery, clinical, 1; malaria fever, E. A., 1; measles, 1; lobar pneumonia, 9; tuberculosis, 3; and typhoid fever, 1, leaving a balance of seven deaths from all other diseases, and 12 deaths from external violence.

The epidemic of measles, stated in a previous report, still continues, but is apparently on the decline, the number of cases reported being materially less.

No cases of yellow fever, smallpox, or plague were brought to, or originated on the Isthmus during the month. Respectfully,

GEO. W. GOETHALS, *Chairman.*

SOCIAL LIFE OF THE ZONE.

Women's Clubs.

Twenty members of the Empire Woman's Club attended the meeting at the Commission clubhouse on Thursday afternoon, May 18. Mrs. Thomas E. Brown, Jr. of Cristobal spoke on child welfare. Selections for two violins were played by Mrs. W. H. Decker and Miss Jessie Smith. The club has decided to take up the study of India and China as given by the Bay View course.

Church Notes.

In response to a request from West Indians, living at Cana in Darien, the Rev. W. H. Decker of St. James Church, Empire, was sent to that station on April 26, and remained ten days, during which time he held six services, married three couples, and baptized 13 children. He organized a mission and placed a catechist in charge until such time as a regular clergyman can be sent to the station. Services are held in a building set apart for that purpose by the Darien Gold Mining Company. There are about 400 persons in the mission.

The Rev. Henry C. Pouget, pastor of the Roman Catholic church at East Balboa, has been transferred to Cristobal, where he is in charge of St. Joseph's church and parish, including Cristobal, Mount Hope, and that part of Colon south of Tenth Street. The Rev. Valeriano Tanco, O. S. A., formerly of the church of San José in Panama, has been assigned to the pastorate at East Balboa.

PERSONAL.

Col. Goethals will sail for the United States on Thursday, May 25 for an absence of about one month.

Fourth of July Celebration.

A meeting of the executive committee for the Fourth of July celebration at Cristobal was held at Ancon on Saturday, May 20. A tentative program was adopted, and the entertainment and amusement committee was delegated to arrange the details. A motion was adopted providing for free transportation on the Fourth on Panama railroad passenger trains to all Americans, and their families, and to others subscribing to the fund. Superintendent Smith advised that all northbound passenger trains would be stopped at Cristobal to unload, and that all southbound trains would leave the Colon station and pass Cristobal without stopping.

A motion prevailed that in case weather conditions prevented the display of fireworks at Cristobal on the night of the Fourth, the committee be authorized to distribute the fireworks among the American settlements in the Zone, and at Porto Bello. A motion was passed approving of the program of the dance committee which has arranged for a ball at the Lincoln House, and which will endeavor to arrange for other dances elsewhere, in order that the crowd may be comfortably distributed.

The Chairman reported the following committees:

Fireworks—Capt. R. E. Wood, chairman; M. A. Follman, James Avery, George Buchan, Frank Thompson, Frank Jury.

Publicity—Col. Tom. M. Cooke, chairman; John O. Collins, W. M. Garrett.

Transportation—J. A. Smith, chairman.

Entertainment and Amusement—Capt. H.W. Stickle, chairman; W. H. Brown, secretary. Subcommittee on athletics: W. G. Comber, chairman; M. E. Smith, Gatun; W. J. Earle, Gorgona; A. R. Richards, Cristobal; H. H. Hammer, Corozal; Charles Pulsifer, Empire; R. S. Mosier, Cristobal; Hugh S. Hunter, Ancon; John Weller, Colon; E. W. Tupper. Subcommittee on water sports: Capt. C. J. Anderson, chairman; H. R. Wilford, S. G. Forbes, C. C. Snedeker, C. T. Owens, Ed. Davis, W. T. Orr, A. R. McDaniels, C. E. Bradley, Jr., D. F. Rabbitt. Honorary members: All masters of American steamers in port at Ancon and Cristobal, July 4. Subcommittee on decoration and music: W. F. Shippee, chairman; S. M. White, J. H. Humphrey, A. L. McLean, Frank Jury, D. W. MacCormack. Subcommittee on comfort and refreshments: John Burke, chairman; J. B. Doyle, William Brugge, W. T. McCormick, Al. Lundin. Subcommittee on fire department contests: C. E. Weidman, chairman; C. F. Koerner, H. J. Wempe, W. J. Cuff. Subcommittee on marines: Lieut. H. S. Wirgman, U.S.M.C., chairman. Subcommittee on police department stands: Capt. C. W. Barber, chairman. Subcommittee on property: J. H. Humphreys, chairman; Clyde Hess, D. F. Fisher.

Finance—E. J. Williams, chairman; H. H. Rousseau, member ex-officio; W. I. Beam, Major S. D. Butler, R. W. Hart, C. H. Mann, George A. Ninas, R. M. Sands, A. B. Shippee, H. E. Bovay, T. L. Clear, J. C. Keller, C. A. McIlvaine, Capt. C. Nixon, C. M. Saville, William Taylor, John Burke, F. C. Freeman, C. W. Lee, R. L. Mock, Judge M. C. Rerdell, W. F. Shipley, R. H. Wardlaw.

Dance—Dr. J. C. Perry, chairman; Dr. M. E. Connor, Robert Beverley, H. S. Newcomb, Rex Sartor.

Rainfall from May 1 to 20, 1911, Inclusive.

Stations.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	2.19	11	7.67
Balboa	1.64	11	5.67
*Miraflores	1.55	13	5.82
Pedro Miguel	1.87	13	6.50
Rio Grande	2.97	11	11.40
Central Section—			
Culebra	2.24	11	10.06
*Camacho	2.92	9	11.96
Empire	2.57	11	10.36
Gamboa	4.02	11	12.14
*Juan Mina	4.10	11	12.69
Alhajuela	3.18	13	11.77
*El Vigia	1.50	11	8.55
*Gorgona	5.45	13	16.43
San Pablo	2.67	15	9.37
Tabernilla	2.84	5	8.82
Bohio	2.14	18	7.13
Atlantic Section—			
Gatun	3.22	16	15.36
*Brazos Brook	2.55	10	15.54
Cristobal	2.44	6	11.80
Porto Bello	5.14	2	*13.36

*Standard rain gauge—readings at 5 p. m. daily. Automatic rain gauge at unstarred stations—values midnight to midnight.

† To 5. p. m., May 19.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending May 31, 1911, (75th meridian time):

Date.	High.	Low.	High.	Low.
	A. M.	A. M.	P. M.	P. M.
May 25	12.46	7.04	1.07	7.35
May 26	1.42	7.55	1.59	8.25
May 27	2:33	8.47	2.48	9.13
May 28	3.22	9.35	3.37	10.00
May 29	4.08	10.23	4.24	10.47
May 30	4.57	11.12	5.12	11.35
May 31	5.45	Noon 12.00	6.00	......

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

Beginning with June 1, the Y. M. C. A. will place in the hands of every member on the Zone, free of charge, a monthly bulletin of health, which will deal with a different phase of personal hygiene each month. The articles will be written by specialists.

COROZAL.

A "smoker" is to be given on Saturday evening, May 27, to which every member and nonmember in Corozal is invited. The program will include piano, vocal and popular music, brass bar swinging, and wrestling. A mock trial will be the closing number. Cigars and refreshments will be served.

The next informal social will be given at the clubhouse on June 2.

CULEBRA.

In the bowling match last Saturday, Empire won two out of three games.

The following are the 100, or over, scores made during the week ending May 20: Huttlemeier, 101, 114; Conlon, 104, 104; Case, 102, 127, 101, 101; Hill, 102, 118; Brown, 100, 110, 100; Koperski, 106; Fox, 103, 101; Judge, 108; Crain, 102; Stearns, 105; Mengel, 110; Frederick, 101.

In a duckpin match Saturday morning, the Culebra boys won three games from the Empire boys. Two high scores were made: Bill Spur, 105; Paul Warner, 121.

EMPIRE.

In the bowling match last Saturday night, Empire took three straight games from Culebra.

The following high scores were rolled in duckpins during the past week: Garrett, 100; Redeghiero, 114, 108, 114, 106; Gorham, 100; Pearson, 104; Rieman, 100; Whalin, 103.

The Gorgona baseball team defeated the Empire team on Saturday night, May 20, by the score of 26 to 3.

The literary society will debate on Friday night, May 26, "Resolved, that the Canal shall not be fortified," Messrs. McLean and Morrowitz will lead.

GORGONA.

An athletic "smoker" was given under the auspices of the physical department committee on Monday evening, May 15, in honor of the track team that carried off the honors at the Empire field meet on Washington's Birthday. Mr. F. C. Freeman presented the medals and team trophy to the athletes. Mr. F. G. Swanson chairman of the physical department committee, was master of ceremonies.

Mr. William J. Earle has been elected captain of the track team for the Fourth of July meet. The candidates will be expected to report to Mr. Earle and Mr. Hopkins during the week of June 10. Mr. Earle represented Gorgona at a meeting of the Fourth of July athletic committee, held at Cristobal, on Friday, May 19.

GATUN.

The Hill Magical Company, necromancers and illusionists, presenting Prof. Kellerman and Assistant Ivanoff, appeared at the Gatun clubhouse on Monday evening, May 22.

A "Ragtime" indoor baseball game was played on Friday evening, May 19, between the "Fats" and the "Leans." The "Fats," captained by John Luckey, won by a score of 22 to 8.

A handsome cue will be given the member who makes the highest run in pool between May 15 and May 31. Mr. DePoorter will receive entries for a handicap pool tournament, and a three-cushion billiard tournament, which will begin on June 1.

Gatun took one out of three games at duckpins with Cristobal on Saturday, May 20.

CRISTOBAL.

Cristobal won two out of three duckpin games from Gatun, Saturday night.

Gatun forfeited the league game of indoor baseball Saturday night by failing to appear at Cristobal.

At the literary society, Wednesday, the 17th, Mr. Chas. J. Dinnin gave a talk on the game of politics, based on his experience in New York City. Tad Dickson, Jr., read an original story called the "Message of the postcard." About 50 men have now joined.

A local basketball league of five teams was formed last week Games will be played on Tuesday and Thursday nights during the next two months.

Special moving pictures will be shown on Friday night, May 26.

PORTO BELLO.

A pool tournament will be started on May 22. Prizes are to be given to the winners of first and second places.

In the simultaneous chess game on May 11, Mr. Hanbury won 5½ from 12 opponents. On May 18, Mr. Tuttle won 5½ games from 10 opponents. A handicap chess tournament is being arranged for the month of June.

OFFICIAL CIRCULARS.

May 30 A Holiday.

CULEBRA, C. Z., May 16, 1911.

CIRCULAR No. 390:

Decoration Day, Tuesday, May 30, 1911, will be observed as a holiday in the Canal Zone, and, as far as practicable, all public business will be suspended on that day.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Secretary to Chairman Assumes Duties Temporarily of Chief Clerk.

CULEBRA, C. Z., May 18, 1911.

CIRCULAR No. 391:

Effective this date, Mr. Wm. H. May will, in addition to his duties as Secretary to the Chairman, assume the duties of Chief Clerk during the absence on leave of Mr. C. A. McIlvaine.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Acting Division Engineer.

CULEBRA, C. Z., May 18, 1911.

CIRCULAR No. 392:

Effective this date, Mr. A. S. Zinn will act as Division Engineer of the Central Division during the absence of Lieutenant-Colonel D. D. Gaillard on leave.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Restrictions on Garden Hose Revoked.

CULEBRA, C. Z., May 18, 1911.

CIRCULAR No. 365-A:

In view of the recent heavy rains the restrictions on the use of garden hose, ordered in Circular No. 365, are hereby revoked.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Injury Leave of Employe Lent by One Division to Another.

CULEBRA, C. Z., May 16, 1911.

CIRCULAR No. 357-B:

When an employe, temporarily loaned by one division to another, is injured, the cost of all injury leave incident thereto is borne by the division in which and for which he was working at the time the injury was sustained.

This extends the provisions of Circular No. 357-A, which applies only to employes of the Mechanical Division, to all departments and divisions.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Ice for Locomotives and Steam Shovels.

CULEBRA, C. Z., May 20, 1911.

CIRCULAR No. 393:

The following will hereafter be considered the standard allowance of ice for locomotives and steam shovels of the Isthmian Canal Commission and Panama Railroad Company:

Locomotives—Not exceeding twenty pounds per day, except

(1) Panama railroad passenger train locomotives and through freight train locomotives, for which the allowance will be five pounds per trip; and

(2) Panama railroad shuttle train locomotives and local freight train locomotives, for which the allowance will be ten pounds per day or per trip.

Steam Shovels—Not exceeding twenty pounds per day.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Cabins on the "Ancon".

HEADS OF DEPARTMENTS AND DIVISIONS:

CULEBRA, C. Z., May 20, 1911.

All available accommodations for cabin passengers on the steamship *Ancon*, scheduled to sail from Cristobal, on or about June 13, 1911 (replacing the scheduled sailing of the steamship *Panama*) having been reserved, no further requests for cabin passage will be issued.

Requests for steerage passage will be issued for this sailing until further notice.

By direction of the Chairman.

Respectfully,
W. H. MAY, *Secretary to the Chairman.*

Requests for Reservations on P. R. R. Steamers.

CULEBRA, C. Z., May 17, 1911.

Employes, when requesting reservations by mail on Panama railroad steamers, should always furnish the ticket agent the address on the Isthmus to which notices of assignment and tickets are to be mailed. Employes should read over carefully the instructions for securing reservations, which are printed on the request for reduced rate, before mailing the request to the ticket agent. Failure to observe these instructions will cause delay and confusion in arranging transportation.

By direction of the Chairman. Respectfully,
C. A. McILVAINE, *Chief Clerk.*

Price of Coal.

PANAMA RAILROAD COMPANY,
OFFICE OF GENERAL SUPERINTENDENT,
COLON, R. P., May 19, 1911.

Supplement No. 1 to coal tariff effective May 1, 1911:

AT PANAMA.

United States and Panamanian warships, alongside in lighters.. $8.15

Sale of Building Material.

OFFICE OF CHIEF QUARTERMASTER,
CULEBRA, C. Z., May 20, 1911.

Sealed proposals will be received at this office until 3 p. m., Saturday, June 3, 1911, and then opened, for the purchase of all or any part of a miscellaneous lot of building material, viz., sash, doors, blinds, etc. A list of the material, showing sizes, can be obtained from the Quartermaster's storehouse, Empire, C. Z., where the material is now stored and open for inspection. Proposals should be accompanied by check, money order, or cash, for five per cent (5°/₀) of amount bid, endorsed "Proposal for purchase of building material," and addressed to C. A. Devol, Chief Quartermaster, Culebra, C. Z.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Gorgona, C. Z., on Sunday, May 28, 1911, at 6 p. m. The program follows:

1 March—*Give the Countersign*............Scouton
2 Selection—*Robin Hood*...............De Koven
3 Paraphrase—*Nearer, My God to Thee*......Reeves
In which the band will be assisted by a chorus of 100 pupils from the public schools of the Canal Zone.
4 Overture—*Zampa*..........................Herold
5 Wooden Shoe Dance—*Dutch Kiddies*...Trinkaus
6 Medley Selection—*Southern Plantation Songs*..........................Conterno
7 Idyl—*Love's Message*......................Brooks
8 Selection—*The Prince of Pilsen*..........Luders
9 Galop—*At the Races*.....................Barnard

CHAS. E. JENNINGS, *Musical Director.*

The next concert will be given at Balboa on Sunday, June 4, at 2 p. m.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, May 20, 1911. All heights are in feet above mean sea level.

DAY AND DATE.	STATION.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun. May 14...	129.8	95.8	51.0	17.6	16.6
Mon. May 15..	128.6	93.6	46.7	16.8	16.6
Tues. May 16..	131.2	96.0	47.3	16.8	16.6
Wed. May 17..	131.1	96.3	49.0	16.8	16.4
Thurs. May 18.	133.8	98.2	50.7	17.4	16.5
Fri. May 19....	127.6	94.0	47.3	16.8	16.6
Sat. May 20...	132.4	97.2	49.5	16.8	16.6
Height of low water.......	125.0	92.0	44.0		

Lease of Lots in Colon.

Sealed bids will be received up to 5.30 p. m., Wednesday, May 31, 1911 for lease to the highest bidder of lots in the newly filled section of Colon as shown on plans which may be seen at the Land Office in Colon and at the Land Office in Panama.

These sealed bids must be addressed to the General Superintendent of the Panama Railroad Company, Colon, and must be plainly marked on the outside of the envelope "Proposal for lot No. ——, block No. ——, Colon." Bids not marked in this manner will not be considered.

The minimum rental to be accepted for these lots may be ascertained by applying to either one of the above mentioned Land Offices.

Persons holding options on any lots in this district and having paid rental up to June 30, 1910, will have the privilege of taking the lot at the highest rate offered.

The lots to be leased are those on the west side of E street between 2d street and 14th street, and that district on the east side of E street bounded by 2d street on the north, 9th street on the south, E street on the west and G street on the east.

Those lots on the west side of E street will be available for building on or about June 1, 1911; the balance of the lots will not be available for building before October 1, 1911.

Parties submitting bids must state character and purpose of building they intend to erect, and must indicate period of time in which they expect to commence construction after assignment.

Application blanks may be obtained at the Land Office in Colon and Panama.

All rental is to be paid quarterly in advance.

The Panama Railroad Company reserves the right to reject any or all bids.

J. A. SMITH,
General Superintendent.

Colon, R. P., April 22, 1911.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Alliança	P. R. R.	Wednesday	May 24
Ancon	P. R. R.	Wednesday	May 31
Advance	P. R. R.	Tuesday	June 6
Colon	P. R. R.	Monday	June 12
Alliança	P. R. R.	Saturday	June 17
Ancon	P. R. R.	Saturday	June 24
Advance	P. R. R.	Friday	June 30
Colon	P. R. R.	Friday	July 7
Alliança	P. R. R.	Thursday	July 13

CRISTOBAL TO NEW YORK.

Advance	P. R. R.	Wednesday	May 24
Colon	P. R. R.	Wednesday	May 31
Alliança	P. R. R.	Tuesday	June 6
Ancon	P. R. R.	Tuesday	June 13
Advance	P. R. R.	Sunday	June 18
Colon	P. R. R.	Saturday	June 24
Alliança	P. R. R.	Friday	June 30
Ancon	P. R. R.	Thursday	July 6
Advance	P. R. R.	Wednesday	July 12
Colon	P. R. R.	Wednesday	July 19
Alliança	P. R. R.	Tuesday	July 25
Ancon	P. R. R.	Monday	July 31

NEW YORK TO COLON.

Prinz Joachim	H.-A.	Saturday	May 20
Zacapa	U. F. C.	Thursday	May 25
Prinz Eitel Friedrich	H.-A.	Friday	May 26
Thames	R. M.	Saturday	May 27
Almirante	U. F. C.	Thursday	June 1
Prinz Aug. Wilhelm	H.-A.	Saturday	June 3
Santa Marta	U. F. C.	Thursday	June 8
Prinz Sigismund	H.-A.	Friday	June 9
Trent	R. M.	Saturday	June 10
Metapan	U. F. C.	Thursday	June 15
Prinz Joachim	H.-A.	Saturday	June 17
Zacapa	U. F. C.	Thursday	June 22
Prinz Eitel Friedrich	H.-A.	Friday	June 23
Magdalena	R. M.	Saturday	June 24
Almirante	U. F. C.	Thursday	June 29
Prinz Aug. Wilhelm	H.-A.	Saturday	July 1
Santa Marta	U. F. C.	Thursday	July 6
Clyde	R. M.	Saturday	July 8
Prinz Sigismund	H.-A.	Friday	July 7

COLON TO NEW YORK.

Santa Marta	U. F. C.	Thursday	May 25
Prinz Sigismund	H.-A.	Saturday	May 27
Trent	R. M.	Tuesday	May 30
Metapan	U. F. C.	Thursday	June 1
Prinz Joachim	H.-A.	Tuesday	June 6
Zacapa	U. F. C.	Thursday	June 8
Prinz Eitel Friederich	H.-A.	Saturday	June 10
Magdalena	R. M.	Tuesday	June 13
Almirante	U. F. C.	Thursday	June 15
Prinz Aug. Wilhelm	H.-A.	Tuesday	June 20
Santa Marta	U. F. C.	Thursday	June 22
Prinz Sigismund	H.-A.	Saturday	June 24
Clyde	R. M.	Tuesday	June 27
Prinz Joachim	H.-A.	Tuesday	June 27
Metapan	U. F. C.	Thursday	June 29
Prinz Joachim	H.-A.	Tuesday	July 4
Zacapa	U. F. C.	Thursday	July 6
Prinz Eitel Fredrich	H.-A.	Saturday	July 8
Atrato	R. M.	Tuesday	July 11

NEW ORLEANS TO COLON.

Turrialba	U. F. C.	Saturday	May 20
Parismina	U. F. C.	Wednesday	May 24
Abangarez	U. F. C.	Saturday	May 27
Heredia	U. F. C.	Wednesday	May 31

COLON TO NEW ORLEANS.

Atenas	U. F. C.	Thursday	May 25
Cartago*	U. F. C.	Thursday	May 25
Turrialba	U. F. C.	Thursday	June 1
Parismina*	U. F. C.	Thursday	June 1
Abangarez	U. F. C.	Thursday	June 8
Heredia*	U. F. C.	Thursday	June 8

The Hamburg-American steamers leave Colon for New York via Kingston at 10 a. m. on sailing dates. The *Prinz August Wilhelm* and *Prinz Joachim* call at Santiago, Cuba, on both outward and homeward voyages. A ship will leave Colon for Bocas del Toro at 5 p. m. on June 14 and July 12, and for Port Limon at 6 a. m. on May 30, and 5 p.m. on June 14.

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships designated (*) for New Orleans via Port Limon and Puerto Barrios on Thursday at 4 p. m.; ships for New York via Kingston on Thursday at 11 a. m.; for Bocas del Toro on Monday at 6 p. m.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, MAY 31, 1911. No. 40.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Canal Bridge Project Abandoned.

The board appointed by the Chairman to consider the question of the erection of a permanent bridge over the Canal, and which, in November, 1910, made a preliminary report favoring the construction of a bridge of the high, fixed type at Empire, has reconsidered the subject, and has submitted another report and recommendation to the effect that the project be abandoned. The action of the board has been approved by the Chairman and Chief Engineer.

In reaching its later decision, the board gave consideration to a number of developments that have occurred since the framing of its original report. One of these was the lessened necessity for a bridge to provide railway facilities. The survey of the Panama-David railroad, as made by the Panama Railroad Company, planned to have the new line cross the Canal in the vicinity of Empire. This arrangement has since been changed by the Panama Government, and it is now proposed, in case the road is built, to bring it to the Pacific slope, outside of the Zone line, connecting with Panama from this point by ferry.

Another reason that had considerable weight was the increased cost of a high level bridge, due to the increased amount of fill required to connect the east approach with the relocated Panama railroad. At the time the committee made its first report, no complete data were available on the Isthmus, and a clearance height of 175 feet above minimum sea level was tentatively taken as the basis of the committee's calculations. Since then, a change has been made in the alignment of the relocated line around Gold Hill, which has removed the tracks further away from the Canal in the vicinity of Empire. In addition, data received from various official sources, and from the different steamship lines and builders, both in the United States and abroad, indicate that a clear height of 175 feet would not be sufficient for the fixed wireless masts of the largest existing steamships, some of which would require a clear height of 212 feet.

In order to give the people living west of the Canal suitable means of communication, after rail connection over the canal is interrupted, the board favors the operation by the Panama railroad of an independent shuttle train service on the west bank, between a point approximately opposite Pedro Miguel, and as far north as the waters of Gatun Lake will permit, the transfer of passengers and freight across the Canal to be provided for by barge or ferry boat. The board also favors the construction of inclines to the 95-foot berms on each side of the Canal at one or more intermediate points for convenient access by foot passengers, horses, carts, etc., so that the transfer at such intermediate points can be made, if necessary, at any time by small boat or barge.

High Steam Shovel Average in Empire District.

On May 23 1911, seventeen steam shovels working in the Empire District excavated 25,999 cubic yards, or an average per shovel of 1,529 cubic yards, almost all rock, and difficult to handle.

This is the highest average per shovel in this district during the present fiscal year, the next highest being on March 31, 1911, when 20 steam shovels excavated 29,279 cubic yards, or an average of 1,464 cubic yards per shovel.

Old Ship at Nombre de Dios.

A second wreck has been found by the suction dredge which is excavating sand for Gatun locks at Nombre de Dios, an old hull at a point about 250 feet inside the shore line and 20 feet below the surface of the ground. No effort has been made to takeout the hulk, because the dredge operates easily over it, but it appears to be about 100 feet long. The pumps have drawn up a small figurehead of brass, an iron pestle, and a large number of lead bullets from three-fourths to two inches in diameter. A similar hulk was unearthed in September, 1910.

Life Line at Toro Point Beach.

The bathing beach south of Toro Point is used to a large extent by employes of the Commission residing at the settlement, and at points along the Panama railroad, particularly on Sundays. There is at times a strong undertow in the water off the beach, and it is believed that unless some form of protection is arranged, loss of life may occur. To avoid this danger, some old French rail will be jettied in the sand, and connected with discarded wire cable in a manner that will afford the desired protection. An expenditure of $150 has been authorized for the purpose.

Transportation on Commissary Train.

Employes of the Central Division will, in cases of emergency, be permitted to ride on train No. 1, the early morning commissary train from Colon, provided proper authority is exhibited in each case. This arrangement is made to facilitate the transfer of transportation and steam shovel men from Bas Obispo and Las Cascadas to other points in the division. In case an engine is left without an engineer at Pedro Miguel, it will now be possible to supply a man from Las Cascadas in time to take the locomotive out practically on its scheduled leaving time.

Telephone Notes.

The central telephone exchange at Cristobal has been moved from the building in the rear of the police station, to the upper floor of house No. 80, near the Roosevelt avenue railroad crossing. The change was made necessary by the work in connection with the new dock system.

The permanent telephone line along the Panama railroad relocation has been completed between Monte Lirio and Frijoles, and the construction force is now at work extending it south toward Caimito. It is proposed to put another new crew to work within a few days building the line from Gatun south to Monte Lirio.

Miraflores Locks Flooded.

The temporary spillway, which provides an outlet for the water in the hydraulic fill of the west dam at Miraflores, was undercut on Wednesday afternoon, May 24, and a torrent of silt and water rushed through the enlarged opening, the most of which found its way into the upper lock, about 100 yards distant, flooding it to a depth of three feet over the lock floor.

The spillway consisted of rock filling, built up gradually, as the hydraulic fill in the core of the dam was increased in height. The surplus water from the fill passed over this spillway, and was carried off in an artificial channel, finally wasting into the Rio Grande. It is supposed that a small stream of water, which had been percolating through the rock of the spillway, and the consequent disintegration of the underlaying material from this cause, combined with the constantly increasing back pressure created by the mud and water in the fill, had weakened the underlaying material, and finally forced out the bottom.

In the rush of silt and water, large rock boulders forming the spillway were carried away and distributed over the territory immediately below. One of these became lodged in the regular channel of the stream, thereby augmenting the overflow in the direction of the lock. No attempt was made to stop the outlet, as it would have been impossible to do so until the three or four feet of silt and water over the solid portion of the dam fill had run off to a depth that could be controlled by sand bags. In this way the flow was stopped after the expiration of about an hour and one-half.

The greater part of the silt and water

NOTES OF PROGRESS.

(Continued.)

entered the upper lock at the extreme north end, where a section of the bank had caved in. The cave-in, however, involved no great damage, as it would have been necessary to excavate the bank at this point later. in order to provide space for the wing walls. In its course to the lock, the flood encountered numerous obstacles, such as timbers, machinery parts, tracks, etc., thereby diverting a part of the flow, which ran along the tracks extending parallel with the west bank, leaving them completely covered in places with a deposit of slime. At low points along the bank, the material found its way into the lock, and while the flood was at its height, three points resembled small waterfalls.

In the lock chamber the slime and water rose three feet over the finished floor. The flooded conditions extended into the lower lock, and partially submerged two of the steam shovels at work there. A portable concrete mixer, situated in the west chamber, was involved, and a number of drills were forced to suspend work.

An 18-inch, motor-driven, centrifugal pump, with a capacity of 10,000 gallons a minute, originally designed for use as a relay pump in making the hydraulic fill of the west dam, was installed, together with its pipe connections, and on Friday evening, May 26, began emptying the locks, pumping the slime and water back into the core of the dam. When the water was lowered sufficiently, the work of sluicing the deposits of slime toward the sump was begun, and continued until the chambers were wholly cleared. This work was practically finished by Wednesday, May 31.

Practically none of the compacted filling of the dam was lost; the overflow consisted of the water and slime, which stood, as stated, three or four feet over the filling. The slime was pumped back into the dam, because it was the quickest and most economical way of freeing the lock, and most of it passed over the repaired spillway. The loss is confined principally to the delay in concrete construction and excavation, and to the expense of repairing the break, and clearing the lock of mud and water. The lock walls were in no way injured, and the total loss will probably not exceed $8,000. With the exception of Saturday, May 27, when the construction plant was shut down on account of the clogging of the circulating water tunnel at the power house, concrete operations, in part, have been continued uninterruptedly.

The spillway has been rebuilt, and a well-braced, firmly embedded wooden flume, with inside dimensions of three feet, for regulating the flow, has been constructed.

The Cruces Anchors.

A cable from the Secretary of War to the Chairman and Chief Engineer, dated May 21, reads: "There is a rumor that it is contemplated removing Spanish anchors from Isthmus to West Point. The President directs that this be not done."

These anchors, which were described in The Canal Record of April 26, 1911, were recently placed on a raft for transportation down the Chagres River. The raft broke loose from its moorings, and floated down stream until it became entangled in the branches of an overhanging tree near the Panama railroad gravel bed at Gamboa. Shortly afterward, a floating log collided with the raft, causing it to break in two, and allowing the anchors to sink to the bottom of the river. They were pulled out a few days ago by a Panama railroad locomotive, and are now at Mount Hope storehouse pending final disposition.

The Colon Humane Society has donated the sum of $100 to be distributed among needy cases in Colon or Cristobal, through Mr. William Bennyhoff, who had charge of the Red Cross camp in Colon.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

About 66 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of work on May 27, being 1,367,237¼ cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending May 27, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
May 22	1,874	34:16	6	188	2:40	2	164¾	2,226¾
May 23	1,410	22:48	6	512	11:00	2	240¼	2,162¼
May 24	1,048	18:44	4	602	9:30	2	262¼	1,912¼
May 25	1,586	24:00	4	338	5:40	2	225½	2,149½
May 26	1,630	32:12	4	840	14:40	2	379¼	2,849¼
May 27	1,916	31:40	4	636	8:40	2	226½	2,778½
*Portable mixers	....	....	......	230¼	....	......	....	230¼
Total	9,464	163:40	4.66	3,346¼	52:10	2	1,498½	14,308¾
Previously reported	....	....	......	....	....	......	....	1,352,928½
Grand total	....	....	......	....	....	......	....	1,367,237¼

*The 230¼ yards shown for the portable mixers are reinforced concrete, and were placed on the following days May 22d, 33 yards; May 23d, 43½ yards; May 24th, 10½ yards; May 25th, 43¾ yards; May 26th, 34½ yards; May 27th, 65 yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is 78 per cent completed, 653,950 cubic yards, out of a total of 837,400 having been placed at the close of work on May 27. The record for each of the six eight-hour working days of last week, follows:

Date.	Construction Plant.* 2-cubic yard mixers.			Auxiliary Plant. 2-cubic yard mixers.			Auxiliary Plant. ½-cubic yard mixer.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
May 22	....	....	......	462	9.00	2	60	6.50	1	....	522
May 23	....	....	......	510	9.50	2	42	3.75	1	....	552
May 24	....	....	......	548	9.50	2	22	2.00	1	....	570
May 25	....	....	......	558	10.50	2	53	4.50	1	....	611
May 26	....	....	......	372	5.00	1	60	5.50	1	....	432
May 27	....	....	......	114	4.50	1	69	6.50	1	....	183
Total	....	....	......	2,564	48.00	1.67	306	28.75	1	....	2,870
Previously reported	....	....	......	....	....	......	....	....	......	4,187	651,080
Grand Total	....	....	......	....	....	......	....	....	......	4,187	653,950

*Construction plant not operated during week ending May 27.

MIRAFLORES LOCKS.

Over 18 per cent of the concrete for the system of two twin locks at Miraflores was in place on May 27, the total amount on that date being 250,309 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant. 2-cubic yard mixers.			Auxiliary Plant. ½-cubic yard mixer.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers.		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
May 22	1,236	20.00	4	236	14.00	2	379	25.50	4	....	1,851
May 23	924	17.67	4	224	14.00	2	353	22.25	4	....	1,501
May 24	442	10.83	4	50	2.00	1	219	12.50	3	....	711
May 25	522	12.17	2	....	....	......	*3	....	......	....	*525
May 26	452	11.00	2	100	5.50	1	70	6.50	1	....	622
May 27	....	....	......	....	....	......	54	5.50	1	....	54
....	....	....	......	....	....	......	†109	....	......	....	109
Total	3,576	71.67	2.67	610	35.50	1	1,187	72.25	2.17	....	5,373
Previously reported	....	....	......	....	....	......	....	....	......	3,693	244,936
Grand Total	....	....	......	....	....	......	....	....	......	3,693	250,309

* Includes 3 cubic yards laid by hand.
† The 109 yards were mixed by a ½-yard mixer on May 22.

EXECUTIVE ORDERS.

To Provide for the Collection of a Distillation Tax.

By virtue of the authority vested in me, I hereby establish the following Order for the Canal Zone:

Section 1. On and after the date on which this Order shall take effect, there shall be collected the sum of *ten cents* on each and every litre, or fraction thereof, of distilled spirits produced in the Canal Zone from grain, starch, sugar, molasses, or any other substance by distillation, or any other alcoholic liquors produced by distillation, for sale or consumption.

Section 2. Manufacturers or distillers of any of the spirits or alcoholic liquors mentioned in the preceding section shall make application in writing to the Collector of Revenues of the Canal Zone, upon a form prescribed by him, for license to engage in business as such manufacturers or distillers. No application shall be granted by the Collector of Revenues unless the applicant secures the the payment of the taxes that may accrue under the provisions of this law by executing a bond with two or more good and sufficient sureties to the satisfaction of the Collector of Revenues, conditioned upon the applicant's faithful compliance with this Order and the regulations issued thereunder, and that he will pay all taxes that may be assessed against him under this Order; or in lieu of said bond the Collector of Revenues, in his discretion, may require a money deposit from such applicant to secure the payment of such taxes. The said bond or deposit, as the case may be, to be subject to such rules and regulations in conformity herewith as the Isthmian Canal Commission may from time to time establish.

Section 3. The tax herein provided for shall be computed upon a meter measurement of the output of each still made through a meter of standard make, which shall be attached to the still under the supervision of the Collector of Revenues, or his Deputy, and in a manner satisfactory to said officer, and at the expense of the owner or operator of said still; and the Collector of Revenues shall withhold the license for the operation of said still until the said meter has been attached thereto in the manner herein provided for.

Section 4. The licensed manufacturer or distiller under this law shall be permitted to sell or otherwise dispose of the output of his still, at his place of manufacture or production, in quantities of not less than *five gallons* without the payment of any further license tax than that prescribed by this Order.

Section 5. Any person manufacturing or distilling any of the spirits or alcoholic liquors herein enumerated before obtaining a license to do so from the Collector of Revenues, or before installing the meter herein prescribed, or who shall tamper with any still or meter or connection thereof with intent to defraud the revenues of the Canal Zone, shall be guilty of a misdemeanor, and upon conviction, shall be punished by a fine not exceeding one thousand dollars ($1,000), or by imprisonment in the district jail for a term not exceeding twelve (12) months, or by both such fine and imprisonment, within the discretion of the court.

Section 6. The Isthmian Canal Commission may from time to time establish such rules and regulations as may seem necessary to execute the provisions of this Order.

Section 7. All laws, orders or decrees in conflict with the provisions of this Order are hereby repealed.

Section 8. This Order will be effective *thirty days* from this date.

WM. H. TAFT.

THE WHITE HOUSE, *May 13, 1911.*

[No. 1353.]

Relating to the Boarding of Trains in the Canal Zone.

By virtue of the authority in me vested, I hereby establish the following Order for the Canal Zone:

Section 1. Any person who shall board any passenger, freight, or other railway train in the Canal Zone, whether moving or standing, for any purpose and without in good faith intending to become a passenger thereon, and with no lawful business thereon, and with intent to obtain a free ride on such train, however short the distance, without the consent of the person or persons in charge thereof, shall be guilty of a misdemeanor, and shall be punished by fine of not less than five dollars, nor more than twenty dollars.

Section 2. This Order shall take effect thirty days from this date.

WM. H. TAFT.

THE WHITE HOUSE, *May 11, 1911.*

[No. 1352.]

Drowning.

Ambrose O'Neill, an American, employed as fireman in the Cristobal fire department, was drowned while bathing at Toro Point on Tuesday, May 30. He was born at Liberty, N.Y., was 34 years of age, and had been on the Isthmus since May 31, 1910. His father, residing at 81 McDougal street, Brooklyn, survives him.

Duty Exemption for Returning Employes.

Employes of the Isthmian Canal Commission and the Panama Railroad Company, returning to the States, are allowed $100 worth of merchandise in the nature of personal effects at their foreign value, free of duty, provided they are not intended for other persons, or for sale, or to be used in business, and are properly declared on regular form, issued by customs authorities. Under this ruling, employes are not allowed to carry articles of merchandise into the States, free of duty, for their relatives and friends.

Gatun Dam Spillway.

The concrete work in the spillway of Gatun Dam is over 60 per cent completed, 137,327 cubic yards, out of a total of 225,000, having been placed at the close of work on May 27. A statement of the amount laid each day last week, and of the total in place, follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
May 22	256	8:00	1
May 23	244	8:15	1
May 24	276	8:30	1
May 25	176	6:30	2
May 26	176	8:00	1
May 27	212	8:00	2
Total	1,340	47:15	1.33
Previously reported	135,987		
Grand total	137,327		

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the two weeks ending May 27, follows:

DATE.	Hours worked.	Cubic Yards.
May 15	5:41	2,180
May 16	5:55	2,033
May 17	5:43	1,964
May 18	5:04	1,814
May 19	5:58	2,312
May 20	4:38	1,613
Total	32:59	11,916
May 22	5:17	1,727
May 23	3:18	1,653
May 24	6:01	1,721
May 25	5:34	1,348
May 26	6:58	2,801
May 27	6:11	2,532
Total	33:19	11,782

Married.

SHADY–BEELER—At Greencastle, Indiana, on May 11, Ada Mae, daughter of Mrs. Elizabeth Beeler, to Mr. Richard Carson Shady. Canal Zone residence, Gorgona.

LABOR FORCE AND QUARTERS IN APRIL.

The total of the Canal and Panama railroad force at work on April 26 was 35,259, as compared with 35,806 in March, 1911 and with 36,903 in April, 1910. Of the total in April, 1911, Canal employes numbered 28,132, and Panama railroad, 7,127. The force report follows:

DEPARTMENT.	SILVER EMPLOYES.*														Total Gold.	Grand Total.
	Artisans.						European Laborers.		West Indian Laborers.							
	Monthly.	44 cents.	32 cents.	25 cents.	20 cents.	16 cents.	20 cents.	16 cents.	20 cents.	16 cents.	13 cents.	10 cents.	7 cents.	Total Silver.		
Const'ct'n and Eng'r'ng.	4,459	15	18	229	659	2,503	3,038	1,162	102	521	3,866	2,776	271	19,619	3,432	23,051
Civil Administration	193	..	..	2	3	17	......	......	...	.....	......	7	....	222	358	580
Sanitation	657	..	..	3	2	3	2	1	...	.....	6	283	8	965	366	1,331
Quartermaster's	940	..	3	102	138	61	85	9	16	.....	11	732	11	2,108	213	2,321
Subsistence	664	..	..	1	1	......	......	......	...	.....	......	......	....	665	52	718
Disbursements	7	..	..	....	.....	......	......	......	...	.....	......	......	....	7	24	31
Examinat'n of Accounts.	5	..	..	....	.....	......	......	......	...	.....	......	......	....	5	95	100
Total	6,925	15	21	337	803	2,584	3,125	1,172	118	521	3,883	3,798	290	23,592	4,540	28,132
Month previous	7,004	15	21	356	813	2,696	3,344	1,282	122	553	3,583	4,056	287	24,132	4,718	28,850
Changes	-79	..	..	-19	-10	-112	-219	-110	-4	-32	+300	-258	+3	-540	-178	-718

Panama railroad force, 3,786; Panama railroad relocation force, 2,322; Panama railroad commissary force, 1,019. Total, 7,127. I. C. C. force, 28.132. Grand total, 35.259.

*All wages specified are in gold.

On May 1, there were 23,403 occupants of commission quarters. Of this number, there were 9,446 white Americans, including 5,438 men, 2,085 women, and 1,923 children. There were 5,562 Europeans, of whom 4,954 were men, 259 were women, and 349 were children. There were 8,395 negroes, of whom 5,945 were men, 1,125 were women, and 1,325 were children. The above figures include 30 Asiatics at Balboa, and two at Porto Bello.

ATLANTIC TERMINAL DOCKS.

Project Providing for Extensive System Approved.

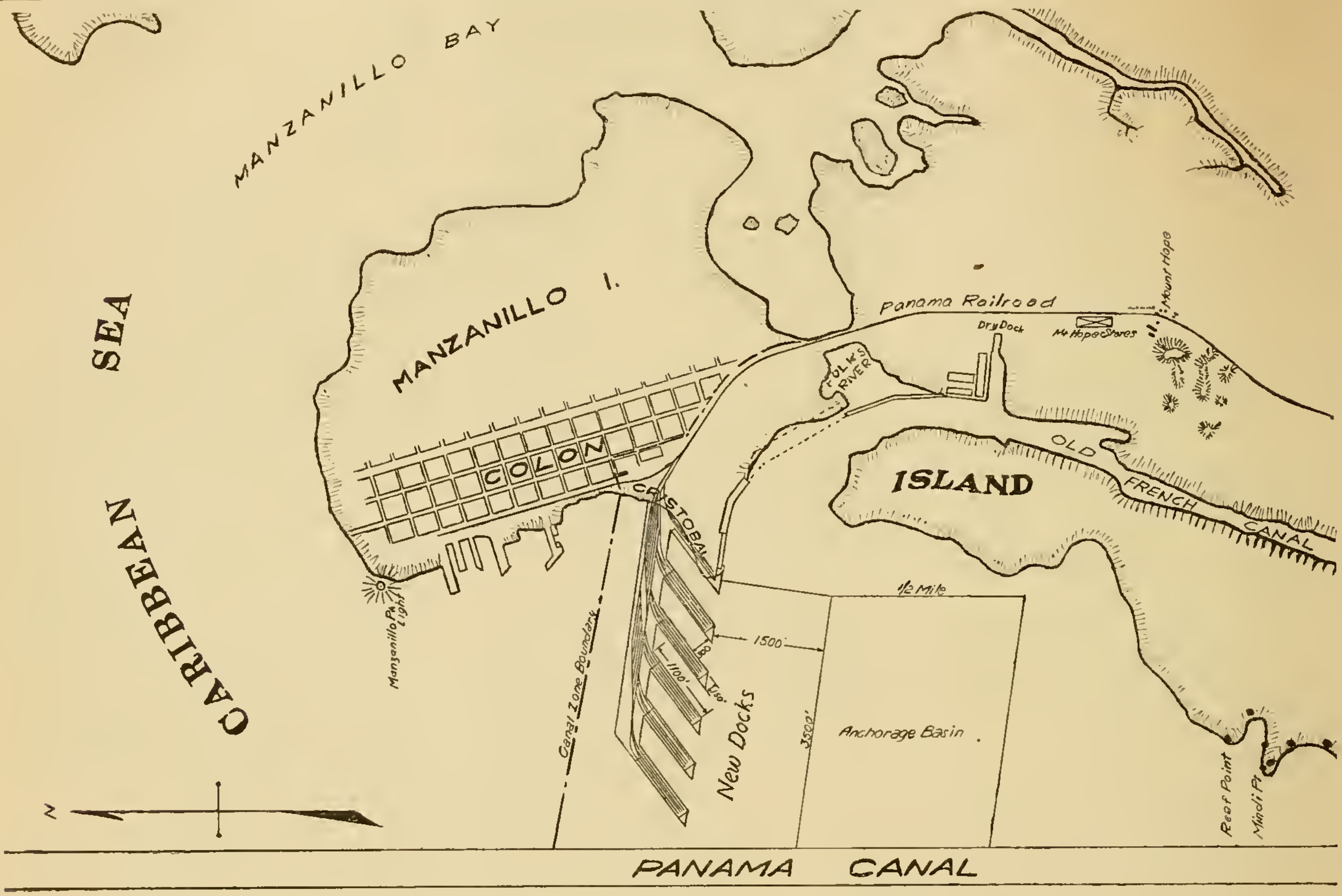
A project for terminal facilities at the Atlantic entrance of the Canal has been approved. It consists of a series of five reinforced concrete docks at which ten 1,000-foot vessels, or 20 vessels of the type now in the Isthmian trade, may tie up at one time and take on and discharge cargo. After consultation with representatives of the Navy, Cristobal Point was determined upon as the site, and borings are now being made to determine the nature of the material underlying the water at this place. A preliminary estimate, based on a preliminary survey, places the cost of the series of docks at $7,811,666, divided, as follows:

Breakwater and back filling	$958,100.00
Permanent extension, Dock 11 (Pier 15) and Pier 16	479,221.00
Pier 17	696,389.00
Piers 18, 19, 20, 21	2,785,556.00
Dredging 9,558,000 cubic yards	2,867,400.00
Construction plant	25,000.00
Total	$7,811,666.00

The docks and anchorage basin in their relation to Cristobal, Colon and the Canal entrance are shown in the accompanying illustration. The plan provides for an anchorage basin east of the Canal, an artificial mole projecting from Cristobal Point, and docks between this mole and the anchorage basin, and the construction of docks around Cristobal Point. It provides for complete shelter of vessels without the construction of the east breakwater, and will enable them to discharge and take on cargo without entering the Canal, an advantage over the plan heretofore considered of having an interior anchorage basin immediately north of Gatun.

Pending the result of investigations now in progress, the nature of the construction has not been determined. Borings so far made, however, indicate a good bottom, and the desirability of concrete bulkhead construction, and the preliminary estimate quoted above is based on this method. It contemplates the sinking of steel cylinders, 10 feet in diameter, spaced 20 feet from center to center, to bed rock. These cylinders will be filled with concrete and connected by a solid bulkhead of reinforced concrete sheet piles, 12 by 20 inches, driven to a point 15 feet below the lowest dredging of the channel. A steel girder encased in concrete, joining the tops of these cylinders, and a 24-inch I-beam encased in concrete and located 15 feet below the water line, take the thrust of the piling. The cylinders will be tied together in pairs directly across the width of each pier. The area with the bulkheads will then be filled to floor level, which will be 10 feet above mean tide, and covered with a floor of surface hardened concrete.

It is estimated that the breakwater and approaches to the docks will require 1,500,000 cubic yards of filling; and the piers themselves 913,000 cubic yards. There will also be required 675 steel cylinders, 152,565 cubic yards of concrete, 402,000 linear feet of reinforced concrete sheet piling, 1,498,560 pounds of steel girder, and 804,000 pounds of steel I-beam.



PLAN OF TERMINAL DOCKS AT ATLANTIC ENTRANCE.

Cristobal Drydock Operations.

The record of operations at the Cristobal drydock for the period from January 1, 1911, to May 20, inclusive, shows that 43 vessels had entered and had been given repairs. The vessels occupying the dock for the longest periods during this time were the suction dredge *Caribbean*, which received a general overhauling, and barge No. 7, which was beached and damaged by a "norther" at Colon in December last. Included in the list of vessels that underwent repairs were two schooners engaged in the West India trade, the *Eduardo* of St. Croix, and the *John Blackwood* of Barbados.

Spanish War Veterans.

Chagres Camp, No. 2, U. S. W. V., will hold a special recruiting meeting in Las Cascadas, on Sunday, June 4, at 7 p. m., in the lodge hall. For blank applications apply to adjutant or commander of camp at Culebra. All members are notified that a regular meeting will be held at Culebra on June 10, at 8 p. m., in the lodge hall. The department inspector will hold an inspection of the camp on that night, and it is requested that all comrades be present.

H. W. Coutermarsh, *Adjutant.*

Culebra, C. Z., May 26, 1911.

FRENCH CANAL PROPERTY.

Special Committee Estimates Its Value to the Isthmian Canal Commission at $42,799,826.

The following report has been approved by the Chairman and Chief Engineer, and the committee's valuation of the property acquired from the French Canal Company has been adopted as the official appraisement of the Isthmian Canal Commission:

Col. Geo. W. Goethals,
Chairman and Chief Engineer,
Culebra, C. Z.

Sir: The special committee appointed by you "to ascertain the value of what the United States received from the French, and for which the United States paid $40,000,000," have the honor to report.

In your letter dated May 3, 1911, appointing the committee, you said:

"Since the estimates were made which are now quoted in this matter, new information has developed that may affect the previous values. Just what figures shall be accepted will depend upon the assumptions on which they are based, and, therefore, any statement of valuation should be accompanied by a full explanation of such assumptions."

The estimate of $40,000,000 was made by the Isthmian Canal Commission of 1899–1901 in a supplementary report to the President, under date of January 18, 1902, and contained the following items:

Excavation already done	$27,474,033
Panama Railroad stock at par	6,850,000
Maps, drawings and records	2,000,000
	$36,324,033
To cover omissions	3,675,967
	$40,000,000

In making their investigation the present committee decided to take up the items of this estimate in their regular order considering first the question of excavation.

Excavation.

When the Isthmian Canal Commission of 1899–1901 made its estimate, it had in view a canal project which contemplated the use of 39,586,332 cubic yards of the excavation done by the French. This project was for a sea level channel from Cristobal to Bohio, a lake from Bohio to Pedro Miguel, an excavated channel from the locks at Pedro Miguel to Miraflores, and a sea level channel from Miraflores to the Bay of Panama. For the project now under construction, which was authorized in its general features in June, 1906, the volume of useful French excavation is much less than that estimated for the project of the Commission of 1899–1901, chiefly because a very large portion of the French canal between Gatun and Bas Obispo is below the + 40-foot grade of the present project. The committee of December, 1909, appointed to determine the volume of French excavation, which was useful to the present project, reported the amount as 29,908,000 cubic yards, classified, as follows:

	Cubic Yards.
Dry	23,138,000
Wet	6,770,000
Total	29,908,000

In determining the value of this excavation to the present project, consideration was given to the fact that it was pioneer work. It included clearing the ground and opening up the work, and also the diversion of several streams. It is probable that a large quantity of it was hand work, and, although it was mostly earth, pioneer excavation is expensive. There was also a considerable amount of rock removed at Gold and Contractor Hills, and at Bas Obispo. For these reasons it was decided by the committee to value this excavation at the average price of excavation under the present Commission previous to June 30, 1909, at which time a total of about 40,000,000 cubic yards of dry excavation had been removed. This average price was $1.03 for dry excavation, and 23 cents for wet. On this basis the value of useful French excavation to the present project is:

Dry, 23,138,000 c. y., at $1.03	$23,832,140
Wet, 6,770,000 c. y., at $0.23	1,557,100
Total	$25,389,240

In the judgment of the committee this is a very conservative estimate, inasmuch as no charge is included for waterworks or sanitation, expenses which would have been incurred had this excavation been done by the present commission.

Panama Railroad Stock.

Included in the purchase from the new Panama Canal Company were 68,888 shares of Panama Railroad stock, par value $100 each, leaving 1,112 shares in the hands of private parties. These 1,112 shares were purchased at a cost of $157,118.24, or an average price of $140. In arriving at the value to the Commission of the 68,888 shares, the average price paid for the outstanding shares was used. This gives a valuation of $9,644,300. When it is considered that the railroad is a very valuable asset to the Commission, and, that through ownership of the property, the Commission has secured the transportation of its freight and passengers at cost, besides using the Panama Railroad Company in many other ways, the valuation is thought reasonable.

Maps, Drawings and Records.

After careful consideration of this item, based on experience since the Americans began work, it was the unanimous judgment of the committee that the estimate of $2,000,000 was a conservative one, and should stand approved in the present valuation.

Material and Equipment.

A partial inventory of the material and equipment received from the French was made by the Commission in June, 1906, and this has been supplemented by members of the present committee with the following results:

Floating equipment	$651,000
Shop machinery and tools	111,076
Rolling stock	297,900
Scrap	294,071
Miscellaneous material	751,396
Air compressors	6,620
Total value	$2,112,063

Buildings.

An estimate of the value of the buildings received from the French Canal Company, by the Americans, based on the past value of the buildings at the time of the transfer, plus the value of repairs, minus 10 per cent to cover depreciation, was made by the architect of the Commission in 1908. There were 2,148 buildings in the Canal Zone turned over by the French, of which, on August 1, 1908, 1,536 had been repaired and were in use. Their estimated value was, as follows:

Quarters, gold	$625,483.63
Quarters, silver	443,800.30
Hotels	7,455.23
Hospitals	482,763.31
Jails	13,503.34
Schoolhouses	12,702.78
Shops	110,200.85
Storehouses	94,099.70
Structures	77,218.20
Miscellaneous buildings of old Department of Sanitation and Government	11,976.46
Total	$1,879,203.80

Not included in this list was the Administration building in Panama, and the residence at present used as the American Legation in Panama. The value of the former, in the judgment of the Committee, was $125,000; and of the latter, $50,000, making the total value of the buildings received from the French, $2,054,203.

Lands.

The French Canal Company purchased, during its existence, a total of 13,520 hectares of land, for which it paid $535,120.73 Colombian money, then equivalent to $428,096.58 gold. This land was included in the property transferred to the United States, but no estimate of its value was made by the Commission of 1899–1901. The price paid for those portions of these lands lying along the line of the Canal do not vary materially from the prices paid by the United States for lands which it has purchased in similar localities since construction began, but others of the French lands, notably those lying near the Pacific entrance of the Canal, were purchased at much lower figures than they could be purchased today. Taking as a basis for valuation the prices which the United States has paid for lands, both through private agreements and under awards made by joint commissions, it is the opinion of the committee that, if the United States was not the owner of any of these lands, and was obliged to acquire them today, in view of the certainty of the Canal's completion, the cost would not be less than $1,000,000.

Other Items.

The committee have considered that the French channel from Balboa to deep water, which was in use for approximately the first four years of American occupation was worth, to the Commission, the sum of $125,000 a year, or $500,000, this being the only approach for commercial shipping and for the delivery of supplies on the Pacific side during that period.

There was a considerable amount of clearing and roadmaking done by the French at several points in the Canal Zone, notably at Ancon, Cristobal, and Empire. The committee consider the sum of $100,000, a moderate estimate of the value of this work.

Recapitulation.

Excavation	$25,389,240
Panama Railroad stock	9,644,320
Maps, drawings and records	2,000,000
Material and equipment	2,112,063
Buildings	2,054,203
Lands	1,000,000
Use of Pacific ship channel	500,000
Roadmaking and clearing	100,000
	$42,799,826

In reaching their conclusions, the committee have ascertained from all available data, the value to the Commission at the present time of the various properties acquired. In their judgment, the aggregate valuation—$42,799,826—is as accurate an estimate as it is possible to make, and they recommend that it be adopted as the official appraisement of the Commission.

Very respectfully,
Joseph Bucklin Bishop, *Chairman,*
W. G. Comber,
A. S. Zinn,
Ad. Faure,
R. W. Hart,
H. S. Farish.

The Southern Baptist Conference will grant a loan to the Baptist mission in Colon for the reconstruction of their church building, which was destroyed by the recent fire.

SOCIAL LIFE OF THE ZONE.

Women's Clubs.

With the meeting on Thursday afternoon, May 11, the season of the Gorgona Woman's Club closed. The present officers will hold over until fall. Meetings will be resumed on September 14, when officers will be elected and the work for the year planned.

The season of the Paraiso Woman's Club closed on Wednesday afternoon, May 24, with a large attendance. Beside the club members, there were present members of the Empire Woman's Club, the teachers and pupils of the upper grade school at Paraiso, and other guests. The gallery of pictures belonging to the Canal Zone Federation of Women's Clubs was exhibited, and Mrs. A. O. Herman of the Cristobal Woman's Club spoke on the different schools of art and the masterpieces represented in the exhibit. Miss Jessie Smith played a violin selection, accompanied by her mother, Mrs. M. E. Smith. The "Current events" class was led by the chairman, Mrs. C. G. Hennigh. The program was followed by a general reception. Refreshments were served at tables decorated with ferns and roses. The club season will reopen in September.

Church Notes.

At a dance in the social hall over the Commission hotel, Las Cascadas, by the members of St. Bernardo's Church, on May 13, the receipts were $85. St. Bernardo's parish is about two years old. The building occupied by the church was given by the Commission, janitor service and light being furnished. In addition, there are two rooms for the resident priest in the rear of the building, which were furnished by the Commission. The pews and furnishings of the church, and the organ, were given by the members of the congregation, which is composed of about 20 American families residing in Las Cascadas. There are two societies connected with the church, viz., St. Elizabeth's Altar Society, which is composed of 14 ladies, and the St. Bernardo's men's club. Mass is celebrated every Sunday at 9:15 a. m.; Sunday school meets at 10 a. m., and vespers are sung at 7:45 p. m. The choir is composed of Americans.

At the invitation of Father Rojas, pastor of the Gorgona Catholic church, Messrs. Ergenzinger and Sheridan of Empire came to Gorgona on Sunday, May 7, and told the Catholic men of Gorgona of the work of St. Ferdinand's Society at Empire. Those attending decided to organize a similar society to that in Empire, and the Gorgona Catholic Club was formed. The purpose of the club is to promote acquaintance among the Catholics of Gorgona, and incidentally assure a fixed sum for the pastor of the church.

Officers were elected and permanent committees were appointed to look after the welfare of the club. The officers are: President, K. G. Faille; vice-president, George A. Ringger; secretary, A. P. Ridge; treasurer, John J. Purcell. The permanent committees are executive, membership, and entertainment. At a subsequent meeting it was decided to have general communion for the members of the club several times during the year. The first will be on Sunday, June 4, at 7 a. m.

Miscellaneous Events.

The Las Cascadas Euchre Club, a recently formed organization composed of twelve ladies, held a social meeting at the lodge hall on Tuesday evening, May 23. Cards were played and the evening closed with informal dancing. Refreshments were served. The club meets on the first and third Tuesday afternoons in each month, and social evening meetings are held monthly for members and their husbands.

The Las Cascadas Dancing Club held a dance in the lodge hall on Thursday evening, May 25.

The regular dance of the Pacific Dancing Club at Paraiso was held in the lodge hall on Saturday evening, May 27.

A "hard times" dancing party was given by the Empire Kangaroos in the lodge hall, on Monday evening, May 29.

The children at Bas Obispo were given an entertainment and "treat" in the gymnasium at Camp Elliott on Tuesday evening, May 9, a sum of money for the purpose having been donated by a recent visitor to the camp. Games were played, and refreshments, consisting of cake, ice cream, candy, and fruit, were served. Each child was presented with a souvenir of the occasion. There were about 50 children present.

Notice to Kangaroos.

The charters of Tabernilla Court, No. 2, and Las Cascadas Court, No. 4, Independent Order of Panamanian Kangaroos, have been annulled, and all members in good standing have been issued time demits. These demits must be deposited with a subordinate court on or before September 30, 1911, or said members become nonaffiliated Kangaroos. For further information, address the Clerk of the Supreme Court.

GEO. F. SWEENEY, *Clerk.*

Gorgona, C. Z., May 27, 1911.

A. U. of S. S. and D.

There will be a special meeting of the A. U. of S. S. and D. on Sunday, June 4, at the lodge hall, Culebra, at 2:30 p. m. All members are requested to be present, in order to transact important business.

Obituary.

R. H. Schofield, an employe of the Pacific Division at Balboa, died at Ancon hospital on May 13. He was twenty-five years of age, single, and had been on the Isthmus since October, 1910.

Missing Men.

Any one having information regarding the whereabouts of Whilliam Mohrenweiser and James A. Shank, who are supposed to be on the Isthmus of Panama, is requested to communicate with the American Legation, Panama.

Any one having information regarding the whereabouts of one Alonzo Arnold or Arnold Parrish, an ex-soldier, who is believed to have come to the Isthmus, is requested to communicate with the American Legation, Panama.

Sailing of the Cristobal.

The steamship *Cristobal* will sail for New York from Pier 11, Cristobal, at 3 p. m., on Wednesday, June 7.

Family Quarters.

Application for married quarters were on file on May 1, as follows:

PLACE.	No. 1 List.*	No. 2 List.
Ancon	2	32 (1)
Ancon Hospital	2	5
Balboa	1	38 (7)
Corozal	....	32 (3)
Cristobal	6**	128 (3)
Culebra	5	37
Empire	11	61 (22)
Gatun	3	154 (63)
Gorgona	28	114 (17)
Las Cascadas-Bas Obispo	6	27 (6)
Miraflores	....	2
Pedro Miguel-Paraiso	2	50 (18)
Porto Bello	....	10 (2)
Tabernilla	10	54 (1)
Toro Point	1	8
Total	77	752 (143)

NOTE.—Figures in parentheses represent occupants of nonhousekeeping quarters.

*Persons employed prior to January 1, 1908.

**Five P. R. R.

Rainfall from May 1 to 27, 1911, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	2.19	11	10.65
Balboa	1.64	11	7.67
*Miraflores	1.55	13	8.70
Pedro Miguel	1.87	13	8.40
Rio Grande	2.97	11	15.38
Central Section—			
Culebra	2.33	25	13.74
*Camacho	3.03	25	16.73
Empire	2.57	11	12.29
Gamboa	4.02	11	13.14
*Juan Mina	4.10	11	13.91
Alhajuela	3.18	13	14.88
*El Vigia	1.74	25	10.32
*Gorgona	5.45	13	16.98
San Pablo	2.67	15	9.85
Tabernilla	2.84	5	10.12
Bohio	3.74	23	11.87
*Monte Lirio	3.90	11	18.97
Atlantic Section—			
Gatun	3.22	16	18.51
*Brazos Brook	2.55	10	18.77
Cristobal	2.44	6	16.47
Porto Bello	5.14	2	*17.64

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

† To 5. p. m., May 26.

CLASSIFIED EXPENDITURES.

A statement of classified expenditures of the Isthmian Canal Commission to March 31, 1911, follows:

PERIOD.	Department of Civil Administration.	Department of Sanitation.	Department of Construction and Engineering.	General Items.	Total.
Total to June 30, 1909	$3,427,090.29	$9,673,539.28	$69,622,561.42	$78,022,606.10	$160,745,797.09
Total fiscal year 1910	709,351.37	1,803,040.95	26,300,167.05	2,863,088.83	31,675,648.20
July, 1910	58,474.88	156,006.64	2,216,849.78	280,015.85	2,711,347.15
August, 1910	63,887.05	164,220.65	2,348,777.07	336,961.35	2,913,846.12
September, 1910	60,586.46	153,433.27	2,516,814.41	236,170.76	2,967,004.90
October, 1910	37,250.26	146,587.47	2,565,042.28	295,537.33	3,044,417.34
November, 1910	71,981.80	137,912.89	2,356,292.01	233,587.25	2,799,773.95
December, 1910	69,424.73	144,754.71	2,480,221.44	179,047.95	2,873,448.83
January, 1911	71,426 87	137,665.14	2,202,370.20	235,678 30	2,647,140 51
February, 1911	69,886.61	127,198.56	2,172,805.21	173,109.54	2,542,999.92
March, 1911	74,670.20	130,694.38	2,641,274.42	460,607.91	3,307,266.91
Total	$4,714,030.52	$12,775,053.94	$117,423,175.29	$83,316,411.17	$218,228,670.92

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

COROZAL.

The Boy Scouts are now beginning their regular work, in order that they may be able to take the "tenderfoot" test.

A "smoker" was given at the clubhouse on Saturday, May 27, with a large attendance. The program was, as follows: Orchestra; balancing act, Mr. Russell Chatfield; swinging Indian clubs, Kramer; orchestra; solo, Mr. Sales; brass bar swinging, Kramer; slack wire walking, Mr. Chatfield; dance, Mr. Holmes; "Get the buck," Messrs. Bunker and Cunningham; wrestling, Messrs. Collier and Weurz; popular songs and refreshments.

An informal "social" will be given on Friday, June 2. The ladies will furnish pies and cakes and a good program will be given. The bachelors are especially invited to attend.

CULEBRA.

The Culebra bowling team won three games from the Gatun team on Saturday, May 27. The scores are, as follows:

Culebra.				Gatun.			
Fredrick...	85	87	93	Atkins......	84	82	103
Huttlemeier	86	89	97	Adams.....	88	85	94
Conlon....	91	82	105	Rosselot....	81	89	93
Kersey......	77	88	84	Barte.......	94	86	111
Case.......	81	107	99				
Total....	420	453	478		347	342	401

The 100 duckpin scores for the week ending May 27, are, as follows: Conlon, 105; Brown, 102, 111; Crain, 128; Huttlemeier, 100, 101, 105, 100, 113; Case, 115, 103, 100, 102, 109, 100, 105.

The gymnasium class has begun and 15 men are taking advantage of the opportunity for physical work. There is room for several more men, and all members are welcome.

EMPIRE.

The following high scores were rolled in duckpins during the pst week: Dakin, 106, 107; Pinney, 116; Rodeghiero, 101, 107, 113, 111, 106; Rieman, 105, 103, 102; Sawtelle, 104; Garrett, 110, 101; Gorham, 102; Parkis, 106; Potter, 105.

In the duckpin match, Saturday morning, Empire won two out of three games from Culebra.

At the literary society, Friday, May 26, the debate "Resolved, that the Canal should be fortified by the United States," was won by the affirmative. The Rev. Mr. Decker spoke on his recent trip down the coast of Panama.

The Hill Magical Company, necromancers and illusionists, presenting Prof. Kellerman and Assistant Ivanoff, will appear at the Empire clubhouse, Wednesday, June 7.

GORGONA.

The local representative indoor baseball team defeated the "Outlaws" in a fast game, Saturday night, May 27, by the score of 14 to 10. Batteries: Regular team—Ridge and Christianson; "Outlaws"—Kenny and Bielaski.

The Cristobal duckpin team took three straight games from the local team Saturday night.

All men wishing to try for the Fourth of July track team should report for practice Mondays, Wednesdays and Fridays, at 5:15.

The leader's corps will meet every Thursday and Saturday at 5:15, to prepare for the coming gymnasium season in July.

The Hill Magical Company, presenting Prof. Kellerman, will be at the clubhouse, Friday evening, June 2.

GATUN.

A sacred concert was given by the Corozal Musical Society at the clubhouse, Sunday, May 28, at 6 p. m.

The high school of the Canal Zone will give its annual entertainment on Wednesday night, May 31. A cantata, entitled "Wreck of the Hesperus," and a play, "Our Bob," will be given.

The literary club had its largest attendance on May 24. The debate was "Resolved, that the Republic of Panama should be annexed to the United States." The affirmative speakers, Mr. Sands and Mr. Wantland lost to the negative, which was upheld by Mr. Wood and Mr. Carr. Mr. Young, former president of the society, spoke of his trip as a soldier to China, during the Boxer uprising. The literary club is considering a challenge from the Cristobal club for a debate in the near future. It has been suggested that an interassociation debating tournament be arranged among the Y. M. C. As. on the Zone.

Gatun took two out of three games of duckpins from Culebra, on Saturday night, May 27.

Mr. Jess T. Hopkins, physical director at Gorgona, will lead a discussion on "Health," at the "Life problem" club, on Sunday night, une 4. Mr. Hopkins is the head of the "Health league" on the Isthmus.

Mr. Alex. H. McLain has high-run in the pool contest for May. The contest closes at 10 p. m., May 31.

In addition to Col. Sibert and W. N. Windes, the following men of Gatun, representing different lines of work, have been added to the Gatun council: R. M. Sands, F. E. Shuck, Fred Huber, R. M. Gamble, W. C. Gayer, and Dan St. Clair.

CRISTOBAL.

The standing in the Isthmian Duckpin League is, as follows:

	Played	Won	Lost	Per cent
Cristobal...............	36	29	7	.805
Empire...................	30	18	12	.600
Culebra.................	36	16	20	.444
Gatun....................	36	13	23	.361
Gorgona..	30	8	22	.266

Result of games bowled at Cristobal, May 27:

Gorgona.				Cristobal.			
Miller.....	77	93	73	Barrett.....	108	87	101
Davenport.	83	84	78	Furlong....	103	92	93
Seebt......	76	75	77	Hess.......	75	82	85
Simka.....	84	95	98	Claherty....	82	109	80
Orr, J.....	82	77	73	DeCora.....	98	99	113
Total......	402	424	399		466	469	472

In the opening game of the basketball league Tuesday night, Luce's team defeated Morton's team by the score of 34 to 26. Two games will be played June 1.

Corozal forfeited the baseball league game Saturday night by failing to appear.

The literary society had for its subject, "Resolved, that the statehood of Utah be annulled, owing to Mormon duplicity." Messrs. Storla and Randolph upheld the affirmative, and Messrs. Hoyt and Wempe, the negative. The judges decided in favor of the negative. Singing of popular songs, and a reading by Mr. Goodman completed the program.

A committee composed of Messrs. Bullard, Weaver, Marsh, Mosher, and Goodman, have begun making plans for the anniversary banquet, to be held June 29, when the Cristobal Y. M. C. A will have been open for four years.

PORTO BELLO.

Great interest is being maintained in the different tournaments by the members of the Porto Bello chess club. Eighteen moves have been made to date in the tournament by wireless, between the Porto Bello and Culebra chess clubs. Two problems in chess have been played by the members. The third and last is to be played Tuesday night.

A pool tournament has been started, ten names being entered. First and second prizes are to be awarded.

Misdirected Letters.

ANCON, C. Z., May 31, 1911.

The following insufficiently addressed mail, originating in the United States and its possessions, has been received in the office of the Director of Posts and may be secured upon request of the addressee:

LETTERS UNCALLED FOR MAY 24.

Avile, Isidro
Berthea, Mr. and Mrs.
Boyd, F. T.
Carcaud, Mrs. Louise
Cherry, D. F.
Gill, Mrs. George
Hamlin, F. T.
Henter, Chas.
Hersh, S. J.
Lawys, J. E.
Leichty, Theo.
Martin, Earl
Patterson, Cynningham
Smith, Mrs. Ralph
Tamner, Garfield
Weigilt, Wm.
Williams, Miss Mabel
Wilson, Hiram
Yeck, John H.

LETTERS UNCALLED FOR MAY 31.

Austin, Mrs. Jake
Blackwood, L. H.
Collins, Richard
Conolly, R. S.
Crosby, David
Dawes, Arthur
de Mena, Juan
Hanson, Mrs Ben
Harper, Mrs. Cath
Herrington, S. E.
Karim, Aledul
McPherson, Mrs. Arthur Y.
Peden, Joseph C. (2)
Pena, Adolfo
Stafford, Percy
Stepp, Mrs.
Stewart, Wooseter
Stumm, A.
Swinehart, Miss Eva

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, May 27, 1911. All heights are in feet above mean sea level.

DAY AND DATE.	STATION.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun. May 21...	129.8	95.6	49.9	17.5	16.8
Mon. May 22..	128.5	94.4	46.3	16.7	16.6
Tues. May 23..	127.7	94.3	47.0	16.5	16.4
Wed. May 24.	132.5	97.1	47.2	16.5	16.4
Thurs. May 25.	132.9	97.3	50.2	17.3	16.6
Fri. May 26....	128.8	95.1	50.0	17.6	16.8
Sat. May 27...	127.7	94.1	47.2	17.1	16.7
Height of low water.......	125.0	92.0	44.0		

OFFICIAL CIRCULARS.

Acting Chairman and Chief Engineer—Acting Head Department of Civil Administration.

CULEBRA, C. Z., May 24, 1911.

CIRCULAR No. 395:

During my absence from the Isthmus, Lieutenant-Colonel H. F. Hodges will be in charge of the work as Acting Chairman and Chief Engineer, and Mr. H. H. Rousseau will have charge of the Department of Civil Administration until the return from leave of Mr. M. H. Thatcher.

Effective May 25, 1911. GEO. W. GOETHALS,
Chairman and Chief Engineer.

Appointment of Examiner of Accounts.

CULEBRA, C. Z., May 24, 1911.

CIRCULAR No. 394:

Mr. H. A. A. Smith is appointed Examiner of Accounts, vice Mr. W. W. Warwick, resigned, effective May 10, 1911. GEO. W. GOETHALS, *Chairman.*

Employes, who are British Subjects, Allowed Leave Without Pay, on June 22.

CULEBRA, C. Z., May 24, 1911.

HEADS OF DEPARTMENTS AND DIVISIONS:

British subjects employed by the Isthmian Canal Commission or the Panama Railroad Company, who can be excused without inconvenience on June 22, 1911, may be permitted to absent themselves for the whole or part of that day for the purpose of taking part in celebrations in honor of the coronation of King George V. It should be understood, however, that they will not be entitled to pay, except for services actually rendered. GEO. W. GOETHALS,
Chairman and Chief Engineer.

Charges for Docking Vessels at Commission Plants.

CULEBRA, C. Z., May 24, 1911.

CIRCULAR No. 169-G:

Effective June 1, 1911, the following charges will be made for docking vessels at the plants of the Commission:

FOR DEPARTMENTS AND DIVISIONS AND PANAMA RAILROAD.

At Cristobal drydock:
Vessels under 200 feet...........$30.00 for first day.
Vessels under 200 feet—subsequent days. .$10 per day.
At Balboa shipways and gridiron:
Vessels over 125 feet.........................$40.00.
Vessels under 125 feet.........................25.00.

No charge will be made for lay days.

FOR INDIVIDUALS AND COMPANIES.

At Cristobal drydock:
Vessels docked alone............$60.00 for first day.
Subsequent days.................$20.00 per day.
Vessels docked with another vessel.$40.00 for first day.
Subsequent days..................$14.00 per day.
At Balboa shipways and gridiron:
Vessels over 125 feet.........................$60.00.
Vessels under 125 feet........................ 40.00.

No charge will be made for lay days.

At Cristobal drydock, minimum charge to be made will be for one day. GEO. W. GOETHALS,
Chairman and Chief Engineer.

Acting Chief Dispatcher, P. R. R.

PANAMA RAILROAD COMPANY,
OFFICE OF GENERAL SUPERINTENDENT,
COLON, R. P., May 23, 1911.

During the absence of Mr. L. B. Maggard, on leave, Mr. C. W. Northrop will act as chief dispatcher.

J. A. SMITH, *General Superintendent.*

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Balboa, C. Z., on Sunday, June 4, 1911, at 2 p. m. The program follows:

1 March—*Give the Countersign*............Scouton
2 Selection—*The Prince of Pilsen*..........Luders
3 Flower Song—*Sweet Summer Rose*.......Armand
4 Overture—*Norma*.........................Bellini
5 Intermezzo—*That Beautiful Rag*..........Snyder
6 Serenade—*Andalusian*...................Bonnet
7 Idyll—*Love's Message* ....Brooks
8 Valse tres lente—*Amoureuse*.............Berger
9 March—*Bersaglieri*......................Eilenberg

CHAS. E. JENNINGS, *Musical Director.*

The next concert will be given at Hotel Tivoli, June 11, at 7:30 p. m.

Sale of Washstands, Roofing Iron, Etc.

Sealed bids will be received at the office of the Depot Quartermaster, Mount Hope, C. Z., until 2 p. m., June 14, 1911, for the purchase of 175 second hand washstands, and a miscellaneous quantity of French galvanized roofing iron. The right is reserved to reject any or all bids or any parts thereof. Articles can be seen at Mount Hope during working hours. Bids must be plainly marked "Proposals for purchase of washstands and galvanized roofing, to be opened June 14, 1911" and addressed to

C. NIXON, *Depot Quartermaster.*

COMMISSARY DEPARTMENT.

The hours during which the commissaries are open are, as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning May 29.

FRESH MEATS.

	Price.
Mutton—Stewing per pound	6
Shoulder, neck trimmed off, (4 pounds and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing, per pound	10
Shoulder, for roasting (not under 4 pounds), per pound	12½
Chops, shoulder, per pound	16
Chops, per pound	24
Loin, for roasting, per pound	24
Cutlets, per pound	28
Pork—Loin chops or roast, per pound	14
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	8
Corned, No. 1, per pound	12
Corned, No, 2, per pound	10
Chuck roast (3 pounds and over), per pound	12
Pot roast, per pound	12½
Rib roast, second cut (not under 3½ pounds), per pound	16
Rib roast, first cut (not under 3 pounds), per pound	18
Sirloin roast, per pound	19
Rump roast, per pound	19
Porterhouse roast, per pound	20
Steak, chuck, per pound	12½
Round, per pound	13
Rib, per pound	18
Sirloin, per pound	19
Rump, per pound	19
Porterhouse (not less than 1½ pounds), per pound	20
Tenderloin (Western), per pound	24

MISCELLANEOUS.

Caviare, Russian per tin	47, 89
Livers—Beef, per pound	7
Calf, each	60
Half, each	30
Sausage—Pork, per pound	17
Bologna, per pound	10
Frankfurter, per pound	12
Lieberwurst, per pound	10
Sweetbread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	23
one-half dozen only	12
Bluefish, fresh, per pound	14
Halibut, fresh, per pound	15
Shads, fresh, each	†70
Shad roes, fresh, per pair	35

POULTRY AND GAME.

Chickens—Fancy roasting, milk fed, large, each	1.25
Fancy roasting, milk fed, med., each	1.00
Fancy roasting, corn fed, about 4½ pounds, each	90
Fowls, each	60, 70, 80, 90, 1.00
Ducks, Western, about 4½ pounds, each	1.00
Long Island, each	1.30
Long Island, each	1.10
Broilers, milk fed, each	60
corn fed, each	55
Turkeys, per pound	26
Squabs, each	35
Capons	2.10
Partridges, each	50
Grouse, each	50

CURED AND PICKLED MEATS.

Ham—German, Westphalia, per pound	36
Sugar cured, per pound	16
Sliced, per pound	18
Half, for boiling, per pound	17
Boiled, per pound	22
Hocks, per pound	‡8
Picnic, per pound	15
Bacon—Breakfast, whole piece, per pound	22
Breakfast, sliced, per pound	23
Pork, salt family, per pound	14
Ox Tongues each	75
Pig's feet, per pound	9
Tongues, per pound	14
Sliced bacon in 1-pound tins, per tin	30
In 1-pound jars, per jar	30

DAIRY PRODUCTS.

	Price.
Butter—Creamery special, per pound	*30
Cheese—Roquefort, per pound	38
Philadelphia cream, cake	18
Young America, per pound	18
Swiss, per pound	26
Edam, each	1.00
Cheese—Camembert, in small tins, tin	14
Neufchatel, cake	6
Gouda, per pound	34
Milk (Inspected or certified), per bottle	**25
Buttermilk, bottle	**15
Ice cream, quart	‡25
½-gallon	‡50

VEGETABLES AND FRUITS.

Asparagus, per bunch,	*18
Beets, per pound	6
Carrots, per pound	3
Cabbage, per pound	2
Cucumbers, per pound	10
Egg plant, per pound	10
Lettuce, per pound	†14
Onions, per pound	5
Potatoes, white, per pound	3
sweet, per pound	2
Parsnips per pound	3
Peppers, green, per pound	10
Rhubarb per pound	5
Spinach, per pound	6
Squash, per pound	3
Tomatoes, per pound	6
Turnips, per pound	3
Yams, per pound	3
Apples, fancy table, per pound	10
Lemons, dozen	24
Limes, per 100	80
Oranges, per dozen	12
Pineapples, each	15

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal and Colon during the two weeks ending May 27, 1911:

Albuera, May 16, from New York, with 14,190 barrels cement for Atlantic Division; 14,190 barrels cement for Pacific Division.

Atenas, May 18, from New Orleans, with 240 bales alfalfa hay for stock.

Santa Marta, May 18, from New York, with 2 reels wire cable for Pacific Division; 65 coils rope, 4 cases paper, 17 bundles brooms for stock.

Advance, May 19, from New York, with 52 cases rough castings for Central Division; 1 funeral car for Sanitary Department; 15 cases fire extinguishers, 17 cases soda, 11 cases Manila tags, 4 cases rubber hose for stock; and a miscellaneous cargo consisting of 153 packages, weighing 66 tons.

Nordhavlen, May 20, from New York, with 13,740 barrels cement for Atlantic Division; 13,740 barrels cement for Pacific Division.

Colon, May 24, from New York, with 39 pieces crusher machinery and 5 towing hooks and fittings for Atlantic Division, 5 cases electrical machinery and 4 crates crusher parts for Pacific Division; 18 pieces steel plates for Central Division; 629 pieces malleable castings, 34 kegs fluor spar, 225 car couplers and 7 bags journal boxes for Mechanical Division; 15 cases air brake hose, 25 cases ink, 135 steel cargo trucks, 11 kegs soda, and 7 cases creolin for stock; and a miscellaneous cargo, consisting of 1,218 packages, the whole weighing 145 tons.

Metapan, May 24, from New York, with 4 barrels chain for Pacific Division; 20 bundles brooms, 240 pails lubricating grease, 178 drums car oil, 138 drums engine oil, and 79 drums valve oil for stock.

Turrialba, May 25, from New Orleans, with 245 sacks cottonseed meal, and 48.792 feet yellow pine lumber for stock

Canadia, May 27, from New York, with 18,078 barrels cement for Atlantic Division, and 18,078 barrels cement for Pacific Division.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending June 7, 1911, (75th meridian time):

DATE.	High.	Low.	High.	Low.	High.
	A. M.	A. M.	A. M.	P. M.	P. M.
June 1	......	12.24	6.35	12.54	6.51
June 2	......	1.16	7.27	1.50	7:47
June 3	......	2.12	8.24	2.50	8.48
June 4	......	3.13	9.27	3.54	9.57
June 5	......	4.17	10.34	5.02	11.11
June 6	......	5.25	11.40	6.05	......
June 7	12.22	6.28	P. M. 12.41	7.05	......

Sale of Building Material.

OFFICE OF CHIEF QUARTERMASTER,
CULEBRA, C. Z., May 20, 1911.

Sealed proposals will be received at this office until 3 p. m., Saturday, June 3, 1911, and then opened, for the purchase of all or any part of a miscellaneous lot of building material, viz., sash, doors, blinds, etc. A list of the material, showing sizes, can be obtained from the Quartermaster's storehouse, Empire, C. Z., where the material is now stored and open for inspection. Proposals should be accompanied by check, money order, or cash, for five per cent (5°/₀) of amount bid, endorsed "Proposal for purchase of building material," and addressed to C. A. Devol, Chief Quartermaster, Culebra, C. Z.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Ancon	P. R. R.	Wednesday	May 31
Advance	P. R. R.	Tuesday	June 6
Colon	P. R. R.	Monday	June 12
Allianca	P. R. R.	Saturday	June 17
Ancon	P. R. R.	Saturday	June 24
Advance	P. R. R.	Friday	June 30
Colon	P. R. R.	Friday	July 7
Allianca	P. R. R.	Thursday	July 13

CRISTOBAL TO NEW YORK.

Colon	P. R. R.	Wednesday	May 31
Allianca	P. R. R.	Tuesday	June 6
Cristobal	P. R. R.	Wednesday	June 7
Ancon	P. R. R.	Tuesday	June 13
Advance	P. R. R.	Sunday	June 18
Colon	P. R. R.	Saturday	June 24
Allianca	P. R. R.	Friday	June 30
Ancon	P. R. R.	Thursday	July 6
Advance	P. R. R.	Wednesday	July 12
Colon	P. R. R.	Wednesday	July 19
Allianca	P. R. R.	Tuesday	July 25
Ancon	P. R. R.	Monday	July 31

NEW YORK TO COLON.

Prinz Joachim	H.-A.	Saturday	May 20
Zacapa	U. F. C.	Thursday	May 25
Prinz Eitel Friedrich	H.-A.	Friday	May 26
Thames	R. M.	Saturday	May 27
Almirante	U. F. C.	Thursday	June 1
Prinz Aug. Wilhelm	H.-A.	Saturday	June 3
Santa Marta	U. F. C.	Thursday	June 8
Prinz Sigismund	H.-A.	Friday	June 9
Trent	R. M.	Saturday	June 10
Metapan	U. F. C.	Thursday	June 15
Prinz Joachim	H.-A.	Saturday	June 17
Zacapa	U. F. C.	Thursday	June 22
Prinz Eitel Friedrich	H.-A.	Friday	June 23
Magdalena	R. M.	Saturday	June 24
Almirante	U. F. C.	Thursday	June 29
Prinz Aug. Wilhelm	H.-A.	Saturday	July 1
Santa Marta	U. F. C.	Thursday	July 6
Clyde	R. M.	Saturday	July 8
Prinz Sigismund	H.-A.	Friday	July 7

COLON TO NEW YORK.

Metapan	U. F. C.	Thursday	June 1
Prinz Joachim	H.-A.	Tuesday	June 6
Zacapa	U. F. C.	Thursday	June 8
Prinz Eitel Friederich	H.-A.	Saturday	June 10
Magdalena	R M.	Tuesday	June 13
Almirante	U. F. C.	Thursday	June 15
Prinz Aug. Wilhelm	H.-A.	Tuesday	June 20
Santa Marta	U. F. C.	Thursday	June 22
Prinz Sigismund	H.-A.	Saturday	June 24
Clyde	R. M.	Tuesday	June 27
Metapan	U. F. C.	Thursday	June 29
Prinz Joachim	H.-A.	Tuesday	July 4
Zacapa	U. F. C.	Thursday	July 6
Prinz Eitel Fredrich	H.-A.	Saturday	July 8
Atrato	R. M.	Tuesday	July 11

NEW ORLEANS TO COLON.

Abangarez	U. F. C.	Saturday	May 27
Heredia	U. F. C.	Wednesday	May 31
Atenas	U. F. C.	Saturday	June 3
Cartago	U. F. C.	Wednesday	June 7
Turrialba	U. F. C.	Saturday	June 10
Parismina	U. F. C.	Wednesday	June 14
Abangarez	U. F. C.	Saturday	June 17

COLON TO NEW ORLEANS.

Turrialba	U. F. C.	Thursday	June 1
Parismina*	U. F. C.	Thursday	June 1
Abangarez	U. F. C.	Thursday	June 8
Heredia*	U. F. C.	Thursday	June 8
Atenas	U. F. C.	Thursday	June 15
Cartago*	U. F. C.	Thursday	June 15
Turrialba	U. F. C.	Thursday	June 22
Parismina*	U. F. C.	Thursday	June 22

The Hamburg-American steamers leave Colon for New York via Kingston at 10 a. m. on sailing dates. The *Prinz August Wilhelm* and *Prinz Joachim* call at Santiago, Cuba, on both outward and homeward voyages. A ship will leave Colon for Bocas del Toro at 5 p. m. on June 14 and July 12, and for Port Limon at 5 p.m. on June 14.

The Leyland line steamer *Colonian* sails for New Orleans direct on or about Saturday, June 3.

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships designated (*) for New Orleans via Port Limon and Puerto Barrios on Thursday at 4 p. m.; ships for New York via Kingston on Thursday at 11 a. m.; for Bocas del Toro on Monday at 6 p. m.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, JUNE 7, 1911. No. 41.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Pacific Division Locks.

Operations with the permanent construction plant at Pedro Miguel Locks ceased on Saturday, May 20, when the second of the two berm cranes, formerly in use there, was shut down, preparatory to being dismantled for transfer to Miraflores Locks. Hereafter, the concrete mixing at Pedro Miguel Locks will be performed by the auxiliary plant, which now consists of two 2-cubic yard mixers, situated on the west storage trestle in the north forebay, one 2-cubic yard mixer on the east bank at the south end of the lock, and a portable one-half yard mixer. It has been decided not to move all the chamber cranes to Miraflores, but two will be retained at Pedro Miguel, as, in addition to placing concrete, they can be used to advantage in back filling the middle wall, and for miscellaneous handling purposes.

The permanent construction plant at Pedro Miguel Locks was first operated in its entirety on July 6, 1910. For a month or so prior to that time, however, one of the berm cranes and two of the chamber cranes were in use. When the complete plant was first placed in operation, there had already been laid in the locks upward of 175,000 cubic yards of concrete, mostly produced by an auxiliary plant. Between July 6, 1910, and May 20, 1911, there had been laid a total of about 475,000 cubic yards of concrete, mostly mixed and handled by the permanent plant, and of the total of concrete in place on May 20, 1911—651,080 cubic yards—over 400,000 yards had been mixed and placed by the permanent construction plant. There remained to be laid on June 3, 1911, about 180,000 cubic yards, which will be produced by the auxiliary plant.

At Miraflores Locks, two of the berm cranes are in operation, another is nearly set up, and the work of assembling a chamber crane has been begun. The handling system ultimately adopted for these locks, provides for building the side walls with the berm cranes, and for carrying forward the center wall construction with the chamber cranes. Under this arrangement, only two chamber cranes will be required, which will be transferred into the lower lock, as soon as center wall construction in the upper lock is far enough along. It is expected that by the middle of August, concrete operations in the upper lock will be under full headway. In one day recently, one of the berm cranes mixed and delivered directly into the side wall, 820 cubic yards of concrete.

Dynamite for 1911-12.

Bids for supplying 6,500,000 pounds of 45 per cent, and 3,500,000 pounds of 60 per cent, dynamite, a total of 10,000,000 pounds, the estimated amount required for the Canal work during the fiscal year 1911–12, were opened recently in Washington. Awards were made, as follows:

1,625,000 pounds of 45 per cent dynamite, to the Keystone Powder Company, at $12.25 per 100 pounds.

4,875,000 pounds of 45 per cent dynamite, to the DuPont-Nemours Powder Company, at $12.73 per 100 pounds.

1,750,000 pounds of 60 per cent dynamite, to the Keystone Powder Company, at $13.65 per 100 pounds.

1,750,000 pounds of 60 per cent dynamite, to the DuPont-Nemours Powder Company, at $13.82 per 100 pounds.

The price of the dynamite under these awards averages over one cent per pound higher than the figures at which it was supplied for the present fiscal year, which, in turn, were higher than for the previous fiscal year. The prices, under the awards, for the three years in question are, as follows:

FISCAL YEAR 1909-10.

45 per cent dynamite..........$10.60 per 100 pounds.
60 per cent dynamite..........$11.60 per 100 pounds.

One manufacturer was awarded the contract for the entire amount.

FISCAL YEAR 1910-11.

45 per cent dynamite—Keystone, $11.60; Du Pont-Nemours, $11.70, an increase of from $1 to $1.10 per 100 pounds over the previous year's bid.

60 per cent dynamite—Keystone, $12.65; DuPont-Nemours, $12.70, an increase of from $1.05 to $1.10 over the previous year's bid.

FISCAL YEAR 1911-12.

45 per cent dynamite—Keystone, $12.25; DuPont-Nemours, $12.73, an increase of from 65 cents to $1.03 over the previous year's bid.

60 per cent dynamite—Keystone, $13.65; DuPont-Nemours, $13.82, an increase of from $1 to $1.12 over the previous year's bid.

The estimate of dynamite required for the fiscal year ending June 30, 1911, was 13,727,000 pounds. The orders filled, or which remain to be filled, during the present fiscal year, aggregate 10,273,200 pounds; the difference between the estimate and actual requirements, therefore, being 3,453,800 pounds.

District Nursing in Colon.

The two nurses of Colon hospital, who were detailed to special duty as district nurses in the city of Colon, and in Cristobal, have returned to their duty at the hospital, because they can no longer be spared for outside work. This special work was begun on January 15, and the results are believed to have justified the experiment. The work of teaching the mothers to care for and properly feed their infants was difficult, but it is believed that could such teaching be continued over a longer period the benefits would be widespread. The nurse, whose district lay in that part of the city which was destroyed by fire in March, followed her patients into the Red Cross camp and continued her work under somewhat easier conditions. A number of cases of skin diseases broke out at this time, and these were handled by the district nurse. During the four months the two nurses made 3,565 visits. The question of placing nurses on duty in Colon and Cristobal will be again considered in the fall.

Gatun Dam Spillway.

The concrete work in the spillway of Gatun Dam is over 61 per cent completed, 138,371 cubic yards, out of a total of 225,000, having been placed at the close of work on June 3. A statement of the amount laid each working day last week, and of the total in place, follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
May 29	212	7:30	1
May 30 (Holiday)	....	....	....
May 31	224	8:00	
June 1	192	6:45	2
June 2	168	6:00	1
June 3	248	7:30	2
Total	1,044	35:45	1.40
Previously reported	137,327	....	....
Grand total	138,371		

Balboa Notes.

Two of the caissons for the foundation piers of the new Panama railroad lumber dock are being filled with concrete; two are being anchored to bed rock, and the work of excavation at 10 of the other pier locations is going forward. By an alteration in the plans, involving a slight change at one end of the dock, the number of piers required has been reduced to 53.

In making the borings for the proposed new drydock, there was recently brought out a drill core of solid rock, six feet six inches in length, and one inch in diameter. The core consists of the hardest kind of trap rock, without the least change in color or grain from end to end. It is believed that this is the longest core of the kind that has ever been produced intact on the Isthmus.

The steamship *David* of the National Navigation Company of Panama left the shipways on June 3, after receiving a general overhauling. Among the more important repairs made to the vessel, were the fitting of a new tail-end shaft, the fitting of both shafts with new stern bushings, reinforcement of the stern bearing struts, renewal of the rudder, inspection of boiler and application of

NOTES OF PROGRESS.

(*Continued.*)

hydrostatic test, overhauling of its lifesaving appliances, scraping and painting hull. The latter was found to be in good condition. The *David*, which was built in London in 1908, will take the place of the *Taboga*, recently lost off Guanico Point, province of Los Santos, on the run between Panama and Pedregal, the port of David, in Chiriqui. At the request of its owners, the vessel was given inspection by the Local Board of Inspectors.

The steamer *Coclé*, another vessel belonging to the National Navigation Company, which was damaged off the Panama coast a short time ago, is on the shipways undergoing numerous repairs, chief among which is the rebuilding of its engine, renewal of propeller, placing of ten feet of shoe fore and aft, inspection of boiler and application of hydrostatic test, scaling and painting. The vessel was constructed in Valparaiso in 1873, where it was brought, knocked down, from Scotland. The hull, made of Lowmore iron, was found to be in a good state of preservation.

Pacific Division Sand Service.

Sand was supplied in May by the Pacific Division service, as follows:

DESTINATION.	Number Cars.	Cubic yards.
Pacific Division	2,338	35,070
Central Division	29	435
Atlantic Division	26	608
Quartermaster's Department	4	100
Panama railroad	2	50
Miscellaneous	14	235
Total	2,413	36,498

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the week ending June 3, follows:

DATE.	Hours worked.	Cubic Yards.
May 29	7:07	3,024
May 30..(Holiday)		
May 31	7:10	3,404
June 1	5:56	2,514
June 2	6:29	2,928
June 3	6:16	2,806
Total	32:58	14,676

Pilots, Masters, Mates, and Engineers.

A meeting of the Board of Local Inspectors will be held on Wednesday, June 21, at 8 a.m., at the Administration Building, Ancon, at which time applicants for licenses as pilots, masters, mates, or engineers, who have submitted applications on the prescribed form, may appear for examination.

Teachers and Clerks, Philippine Service.

Examinations have been announced by the Civil Service Commission, which may be held at Culebra about the middle of August, for assistant (male), teacher (male and female), and industrial teacher (male), in the Philippine Service, to fill vacancies which may occur in the positions of teacher, industrial teacher, and clerk in that service. The entrance salaries for male and female appointees will probably be from $1,000 to $1,200 per annum.

It is stated that excellent opportunities exist for employes who are efficient and faithful in performing their duties, as it is the practice to fill vacancies in the higher positions by promotion of the best equipped and most competent occupants of positions filled by appointment from the above examinations. It is also set forth that in many ways the opportunities under the Bureau of Education in the work of the United States in the Philippines are unique, and will probably not be equalled anywhere in their attractions for young people having the requisite qualifications and character.

A limited supply of the announcement of the above examinations has been received in this office. Persons interested should request a copy of announcement No. 442, which should be returned to this office as soon as practicable thereafter.

JOHN K. BAXTER, *Secretary,*
Isthmian Civil Service Board.
CULEBRA, C. Z., June 1, 1911.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

Over 66 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of work on June 3, being 1,377,685¾ cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending June 3, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
May 29	1,562	23:18	4	606	8:40	2	255	2,423
May 30 (holiday)								
May 31	1,626	25:00	4	280	5:40	2	144¼	2,050¼
June 1	1,240	20:02	4	508	7:40	2	234½	1,982½
June 2	966	13:54	4	716	9:40	2	251	1,933
June 3	1,152	17:38	4	512	7:40	2	121¼	1,785¼
*Portable mixers				274½				274½
Total	6,546	99:52	4	2,896½	39:20	2	1,006	10,448½
Previously reported								1,367,237¼
Grand total								1,377,685¾

The 274½ yards shown for the portable mixers are reenforced concrete, and were placed on the following days: May 29th, 44 yards; May 31st, 88 yards; June 1st, 42 yards; June 2d, 42 yards; June 3d, 58½ yards.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is about 79 per cent completed, 657,270 cubic yards, out of a total of 837,400, having been placed at the close of work on June 3. The record for each of the five eight-hour working days of last week, follows:

DATE.	AUXILIARY PLANT.						Large stone.	Total
	2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
May 29	634	10:50	2	95	7.50	1		729
May 30 (Holiday)								
May 31	672	11:50	2	82	7.00	1	2	756
June 1	792	14:00	2	80	7.00	2		872
June 2	654	12:00	2	53	5.00	1		707
June 3	186	5:00	2	70	7.25	1		256
Total	2,938	53:00	2	380	33.75	1.2	2	3,320
Previously reported							4,187	653,950
Grand total							4,189	657,270

MIRAFLORES LOCKS.

About 19 per cent of the concrete for the system of two twin locks at Miraflores was in place on June 3, the total amount on that date being 255,518 cubic yards, out of a total of approximately 1,362,000. The record for each of the five 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT.							Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
May 29	530	14:00	4				101	8:00	1		631
May 30	Holiday										
May 31	754	18:67	4				212	15:50	3		966
June 1	712	17:00	4				266	19:25	3		978
June 2	962	22:67	4				238	17:50	3		1,200
June 3	1,174	28:00	4				260	21:00	3		1,434
Total	4,132	100:34	4				1,077	81:25	2.6		5,209
Previously reported										3,693	250,309
Grand total										3,693	255,518

EXECUTIVE ORDER.

Government of the Insane Asylum for the Canal Zone.

By virtue of the authority vested in me I hereby establish the following Executive Order for the Canal Zone:

Section 1. The asylum for the insane at Ancon, as heretofore, shall be under the jurisdiction of the Department of Sanitation. The object of said asylum shall be the curative treatment of the insane.

Section 2. The superintendent of the Ancon Hospital shall be the administrative chief of the asylum for the insane, subject to existing laws and orders, and to such rules and provisions as may be issued by the Department of Sanitation in accordance with existing laws and orders. He shall be in charge of the general inspection of buildings, grounds, and equipment, and shall have the supervision over the professional and administrative personnel of the asylum and over the inmates, and shall satisfy himself that all patients receive the care and medical treatment which is best adapted to their comfort and recovery.

He shall see that a proper register of the patients is kept, showing their names, previous residence, occupation, origin, and antecedents, and condition at the time of admission; and their mental and physical condition, as well as their medical treatment during the time of their stay in the asylum, shall be recorded. The death or discharge of patients shall be entered in the register.

Section 3. No person declared to be insane shall be kept in a jail, prison, hospital for the sick, or other similar institution, but shall be sent, with the proper precautions, to the asylum for the insane herein provided for.

Section 4. The superintendent of Ancon Hospital, through the physician in charge of the asylum, may discharge any patient upon filing in his office a written statement that, in his judgment, such patient has recovered, or that the discharge will not be detrimental or dangerous to the public welfare or injurious to the patient, provided, that before discharging any patient who has not recovered, the superintendent shall satisfy himself, by adequate investigation, that the relatives or friends of the patient are able and willing to receive and care for such patient.

No patient shall be discharged without suitable clothing.

The discharges referred to in this section do not apply to commitments on judicial orders in criminal cases, in which cases, the discharges can be granted only by the court which directed the commitment of the prisoner.

Section 5. No person shall be admitted as a patient in the asylum for the insane except upon the order of a circuit judge of the Canal Zone, provided, that if a patient is in a state of violent insanity he may be admitted at once into the quarters hereinafter provided for the observation of persons alleged to be insane, without an order of court, upon the written request of the district physician to the superintendent of Ancon Hospital, or the patient may be admitted to the observation quarters by said superintendent without such request, in the absence of the district physician.

It shall be the duty of the superintendent of Ancon Hospital to report the case in writing to the circuit judge, within twenty-four hours after the patient has been admitted to the observation quarters, and, as soon as the judge shall have received the report he shall proceed to examine and determine the case in like manner as if the petition had been presented to him prior to the patient's admission into observation quarters.

Section 6. To obtain the judicial order provided for in the preceding section, it shall be necessary for the nearest relative of the person alleged to be insane to present a petition, duly subscribed and sworn to by the petitioner, to the judge of any circuit court of the Canal Zone, which petition shall state the sex, age, and nationality, if known, of the patient, and the facts showing his mental infirmity, and, if possible, the history of the case, and the form of insanity with which he is suffering, and the attending circumstances making it necessary that he be confined in the asylum. The petition shall be accompanied by a certificate signed by one or more reputable physicians to the effect that such person is insane.

When the nearest relatives of the person alleged to be insane are absent, or refuse to act, the petition may be made by the district judge of the district in which the patient resides, or is to be found, at the time the application is made, and in that event it shall state that the nearest relatives of the person alleged to be insane are absent or refuse to act.

Section 7. The petition provided for in the preceding section shall take precedence over all other matters pending before the court, and shall be heard by the judge thereof without delay, and if the facts stated therein are sufficient to satisfy him of the insanity of the person sought to be confined, he shall issue orders at once directing that the person alleged to be insane be taken into custody and placed in quarters hereinafter provided, for the proper observation of the case.

The order of the judge directing that the person alleged to be insane be placed under observation, shall be sufficient authority for the superintendent of the asylum to admit the patient into the institution for the purposes of observation, there to remain until the observation is concluded; and the judge shall direct in said order that if the observation shall show that the patient is not insane he shall be set at liberty at once, and the medical officer in charge of such observation shall forthwith report his action thereon to the judge who issued the order.

The observation of the alleged insane person shall be made in suitable quarters within the asylum grounds, by the chief medical officer thereof, or under his direction, and shall be for a period of not more than thirty days, and the judge who issued the order for the detention of the patient may require the medical officer in charge of the case to make reports thereon to him from time to time.

Section 8. The observation provided for in this law may be carried on at the residence of the alleged insane person, when, in the opinion of the judge, that may be done with safety to the patient and the public; and, in such cases, the judge may impose such limitations and conditions as, in his judgment, the interest of the patient and the safety of the public demand.

Section 9. It shall be the duty of the physician in charge of the observation to examine the patient and observe the symptoms of the case. Within thirty days after the patient is placed under observation, the medical officer in charge of the case shall make his report thereon in writing, and shall state whether the patient is sane or insane. The report shall contain a statement of the facts upon which it is based, and shall be sent to the court having jurisdiction of the case, within twenty-four hours after the same has been subscribed by him.

Section 10. It shall be the duty of the judge having jurisdiction of the case, within twenty-four hours after the receipt of the report provided for in the preceding section, to render judgment therein, either committing the patient to the asylum for the insane, or directing that he be turned over to his relatives, able and willing to take care of him, or to order his discharge, in accordance with the findings of the medical officer in charge of the case.

Section 11. The relatives of the person alleged to be insane, or the public prosecutor, may appear and contest the report of the medical officer, and in such cases, the judge shall hear the evidence presented by the parties and render judgment thereon, either committing the patient to the asylum, or directing his discharge as the law and the facts in the case may justify.

Section 12. From the judgment of the court rendered in accordance with the preceding section, either of the parties may appeal to the Supreme Court of the Canal Zone, which Court shall hear and dispose of the case with all reasonable despatch, giving it precedence over all other matters pending therein.

When an appeal is taken the trial court shall issue such orders as it may deem necessary and proper for the custody and safekeeping of the patient during the hearing of the appeal.

Any person interested in an inmate of the asylum, who believes he is improperly detained therein, may make application to the circuit judge of the First Judicial Circuit for the discharge of such patient. Upon the receipt of such application, the judge shall issue an order to the superintendent of Ancon Hospital to make a report on the patient's condition, and upon the receipt of such report, the judge shall consider the same, and, in his discretion, may grant or deny the application. Should the judge be in doubt as to the proper action to take, he may cause the patient to be examined by two competent physicians, who shall report to the judge in writing as to whether the patient should be released or detained in the asylum. If the physicians recommend the detention of the patient, the court may deny the application; should they recommend his release, the judge may grant the petition and discharge the patient at once.

The relatives or friends of the patient, or the public prosecutor, if dissatisfied with the ruling of the judge, may appeal therefrom to the Supreme Court of the Canal Zone, which Court shall dispose of the appeal as in ordinary cases provided for under this Order; and, pending the appeal, the trial court may make such orders relating to the custody of the patient as may best subserve the interests of the patient and the public.

If the insane person shall be serving a sentence for the violation of the criminal laws, the circuit court of the circuit, wherein the conviction shall have been had, shall have jurisdiction of the petition for the discharge of the patient from the asylum.

Section 13. The order of the judge,

directing the patient be admitted to the asylum for the insane for care and treatment, shall also provide that the marshal, or police officer acting as marshal of the court, shall convey the patient promptly under proper escort to the asylum.

Section 14. If any person confined in a prison or penitentiary under the sentence of a court becomes insane he shall be committed to the asylum for the insane by the judge of the circuit court of the circuit wherein the patient received his sentence of conviction. In all such cases, the provisions of this Order, relating to the period of observation of the patient, and the trial of the issue as to his insanity, shall be observed, provided, however, that the period of observation shall be carried out in the infirmaryof the prison or penitentiary, unless the judge, on the advice of the Department of Sanitation, is of the opinion that it should take place elsewhere. Whenever a person is committed to the insane asylum under the provisions of this section, the order of commitment issued by the court shall include a statement of the offense of which the person was convicted, the term of his imprisonment and the date upon which said term is to expire. Should such person be discharged from the insane asylum before the date of the expiration of his term of imprisonment he shall be returned to the penal institution from which he was taken, in order that he may finish his term; and shall be set at liberty if his discharge from the asylum takes place subsequent to the date of the expiration of his term of imprisonment.

Section 15. All expenses connected with cases of insanity, including the cost of observation, transportation, care, treatment, and maintenance of the patients, shall be borne by their respective estates, to be paid in due order of administration of their estates in accordance with the probate laws of the Canal Zone, and if the patients are insolvent, then the expense shall be borne by the relatives responsible for the care and maintenance of such patients under the law to be recovered by the Isthmian Canal Commission against such relatives in any court of competent jurisdiction; and if the relatives of the patient are also insolvent, then such expenditure shall be paid out of the public moneys appropriated for such purposes.

Section 16. Nothing contained in this Order shall be construed to repeal or modify the provisions of the Code of Criminal Procedure of the Canal Zone, relating to the inquiry into the insanity of the defendants before trial or after conviction.

Section 17. Insane patients from the Republic of Panama may be admitted into the asylum for the insane, herein provided for, in accordance with the existing agreements between the Canal Zone authorities and the Panamanian authorities, or under such changes and modifications of said agreements as may be made from time to time.

Section 18. The Canal Commission is hereby authorized to establish rules and regulations from time to time as may be deemed necessary for the government of the asylum for the insane herein provided for, subject to the approval of the Secretary of War.

Section 19. This Order shall take effect thirty days from this date.

Wm. H. Taft.

The White House, *May 10, 1911.*

[No. 1351.]

COLON FIRE RELIEF.

Work Done by Red Cross for Government of Panama.

Culebra, C. Z., May 29, 1911.

Excellency:

I have the honor to enclose herewith, copy of financial statement rendered by the treasurer of the Canal Zone Chapter of the American National Red Cross, showing receipts and disbursements on account of the sufferers of the Colon fire, up to and including May 27, 1911. It will be observed there has been disbursed a total of $5,658.64.

The work of the Red Cross in connection with this disaster began on the morning of March 24, 1911, the day succeeding the fire, and practically ended on May 1, 1911, when the Cristobal relief camp was closed down. Mr. William T. Bennyhoff, chairman of the Cristobal district, was placed in charge, and gave a greater portion of his time and attention to this work, until the breaking up of the camp on the date indicated.

His Excellency, Governor Rafael Neira, gave every assistance to Mr. Bennyhoff, both in regard to police protection and information as to the status of those requiring assistance, and materially aided in the general work.

The $5,000 contributed by the Government of Panama very nearly accomplished the entire work, leaving but $658.64 to be applied from the amount received from other sources, as indicated by the report herewith.

There were about 3,000 people rendered homeless by the fire. About 500 people were given shelter in the camp daily, and a total of 17,818 rations were issued, both to people living in the camp and people living outside. The approximate cost of rations was 12 cents per ration.

In addition to housing and feeding the destitute, a systematic issue of the necessities of life was inaugurated, including clothing, dry goods, hardware, tools, cooking utensils, etc. One month's rental was also supplied in many cases, and also first payments on sewing machines; the general idea being to furnish practical charity.

For your information, I furnish herewith a list of the beneficiaries, 1,711 in all, which will show in detail how this aid was rendered.

The Y. M. C. A., at Cristobal, Commissary Department at Cristobal, Quartermaster's Department, Mount Hope, and Cristobal Health Office at Cristobal, all rendered valuable assistance, and I cannot close this report without testifying also to the work of Mrs. P. T. Murphy, who gave a large part of her time, and a great deal of most intelligent help to this work.

I am, Sir, with great respect,

Yours very sincerely,

C. A. Devol,

Chairman, Canal Zone Chapter,

American National Red Cross.

His Excellency, Federico Boyd,

Secretary of the Interior, Panama.

Below is a statement of receipts and disbursements on account of the sufferers from the Colon fire:

RECEIPTS.

Received from Panama Government	$5,000.00
Received from Colonial Musical Association	7.50
Received from Cristobal Y. M. C. A. benefit performance	146.00
Proceeds of benefit ball game, Empire and Commissary-Subsistence ball teams	708.15
Received from Odd fellowslodge, Las Cascadas	40.00
Total receipts	$5,901.65

DISBURSEMENTS.

For rent	$ 680.00
For food supplies	2,220.34
For clothing, dry goods and sundries	2,246.84
For bardware, tools, cooking utensils, etc	126.94
First payment on sewing machines	60.00
For meals furnished at I. C. C. hotels and messes	136.54
For printing and stationery (including $34.05 on account of benefit ball game)	105.43
For clerk hire	50.00
Miscellaneous expenses	32.55
Total disbursements	$5,658.64
Unexpended balance, May 27, 1911	243.01

Respectfully,

John L. Phillips, *Treasurer.*

Fourth of July at Cristobal.

The address of the day at the Fourth of July celebration in Cristobal, will be delivered by the Chairman and Chief Engineer, Col. Geo. W. Goethals.

Arrangements are in progress for the entertainment of visitors on dock No. 11, Cristobal, where there will be benches for every one, and light refreshments will be served free. Tables will also be provided for such people as wish to bring their own food and eat it there.

A tennis tournament in singles and doubles will form part of the celebration of July 4. Owing to the prospective large number of entries, the preliminaries, including the semifinals in singles, will be held June 25, and in doubles, on July 2, at courts of Tivoli and Panama clubs, the matches being best two out of three sets. The finals will be held on the Cristobal courts, best three out of five sets; singles at 9:30 a. m., and doubles at 2 p. m., on July 4. This arrangement of the tournament will allow entry in either singles or doubles, or both. All *bona fide* residents of Panama, Colon, and the Canal Zone, are eligible. Gold and silver medals will be given for first and second places. There will be no entry fee; no special entry blanks are required. Entries may be made to Y. M. C.A. secretaries, district quartermasters, or Panama Railroad station agents. All entries should be reported to Chase Pulsifer, Empire, on or before June 20, 1911.

Missing Men.

Information is requested with regard to the whereabouts of Erwin Salomon of Milwaukee, who is believed by his mother to be on the Isthmus.

Any one having information regarding the present whereabouts of Charles A. Nemitz, who left the service of the Commission in December, 1910, is requested to communicate with The Canal Record, Ancon.

Any one having information regarding the present whereabouts of Herbert W. Boddy of Thorofare, N. J., who is supposed to be on the Isthmus, is requested to communicate with The Canal Record, Ancon.

Any one having information regarding the whereabouts of Thomas E. Patterson, who left the service of the Commission in March, 1907, is requested to communicate with the postmaster at Ancon.

Any one having information regarding the whereabouts of Aubrey E. Passailaigue, who is supposed to be on the Isthmus, is requested to communicate with The Canal Record, Ancon.

Obituary.

Mary Enola, daughter of Mr. and Mrs. S. M. Kent of Paraiso, died at Ancon Hospital on June 3. She was fourteen years and seven months old.

COASTWISE TRAFFIC.

New Arrangement Entered Into Between the United States and Pacific Carriers.

The new terms fixed by the United States Government for the handling of coastwise freight by the Panama route, have been accepted by the only Pacific carriers now in that trade, the Pacific Mail Steamship Company, and the California and Atlantic Steamship Company. They are, as follows:

1. On and after June 1, 1911, on all traffic moving between ports upon the Pacific coast of the United States and ports upon the Atlantic coast of the United States upon which the annexed classified tariffs are charged, the division of tariff rates between the Panama Railroad Company and its steamship connections will be, as follows:

(*a*) Upon traffic where the water haul on the Atlantic side is performed by ships of the Panama Railroad Company, the division of rates will be forty (40) per centum to the Panama Railroad Company for joint rail and steamship service, and sixty (60) per centum to the connection.

(*b*) Upon traffic where no part of the water haul is performed by the ships of the Panama Railroad Company, the rate for rail transportation across the Isthmus will be twenty-five (25) per centum of the through rate.

2. In the event that any connection of the Panama Railroad Company should quote a through rate less than that set forth in the annexed classified tariffs, the percentage payable to the Panama Railroad Company will nevertheless be calculated upon the rates therein set forth, unless the Panama Railroad Company should voluntarily consent to accept proportions upon a lower rate.

3. The Panama Railroad Company, until further notice, will furnish its Pacific connection on the Pacific side, coal at the same rate as it is furnished at Balboa to the Isthmian Canal Commission, and will make no charge at Balboa for wharfage or craneage upon coastwise traffic carried under tariffs which the Panama Railroad Company has or shall hereafter agree to.

The terms above stated supersede those of the agreement of November 15, 1909, in which the Pacific cocarrier was given 70 per cent of the through rate, coal at cost at Balboa, and craneage and wharfage free; and a basic rate of $8 per net ton on eastbound, and $9 on westbound freight was established. By this agreement the contract might be annulled on 90 days' notice. When it was found that the cost to the Panama railroad of handling the freight was actually greater than the share it received of the total rate, the 90 days' notice was served by the Government on January 19, but the agreement was later extended until June 1.

Freight business by the Panama route has increased greatly since the opening of the service by the California and Atlantic Steamship Company in October, 1910; and within the last three months there has been a decided increase in the amount of freight from Europe for the west coast of South America. This rapidly increasing freight business is severely taxing the capacity of the Panama railroad box cars for the haul across the Isthmus, and of the docks to unload and load it. A comparison of the freight business for the nine months ending April 1, 1911, with the same period in 1910, follows:

WEST OR SOUTHBOUND FREIGHT OVER PANAMA RAILROAD FOR THE NINE MONTHS ENDING APRIL 1.

Class and Origin.	Tons.		
	1911.	1910.	Increase.
Through Freight:			
From New York, Charleston, and Philadelphia....	118,715	86.607	32,108
From Gulf ports..	17,372	16,091	1,281
From Europe.....	88.266	83,170	5,096
Total..........	224,353	185,868	38,485
Local Freight:			
I. C. C..........	524,404	407,015	117,389
P. R.R..........	19.707	19,659	48
Commercial......	101,873	95,263	6,610
Total..........	645,984	521,937	124,047
Grand total....	870,337	707,805	162,532

EAST OR NORTHBOUND FREIGHT OVER PANAMA RAILROAD FOR THE NINE MONTHS ENDING APRIL 1.

Class and Origin.	Tons.		
	1911.	1910.	Increase. D'crease.
Through Freight:			
To N. Y., Charleston, Phila......	119,330	67,180	52,150
To Gulf ports....	2,674	31	2,643
To Europe.......	44,615	31,316	13,299
Total..........	166,619	98,527	68,092
Local Freight:			
I. C. C..........	69,105	83,509	*14,404
P. R. R..........	6,909	6,913	*4
Commercial......	24,997	22,830	2,167
Total..........	101,011	113,252	*12,241
Grand total....	267,630	211,779	55.851

*Decrease.

A comparison of the through freight business for the fiscal years 1905–1910, with that of the first nine months of the fiscal year 1911, follows:

WEST OR SOUTHBOUND.

Year.	From Europe.	From United States.	Total.
1905..............	92,194	104.739	196,933
1906..............	105,710	100,954	206.664
1907..............	126,910	119,846	246,756
1908..............	148,581	117,066	265.647
1909..............	118,921	117,320	236,241
1910..............	110,518	136,250	246,768
1910–11 (9 months).	88,266	136,087	224,353

EAST OR NORTHBOUND.

	To Europe.	To U. S.	
1905..............	74,723	78,333	153,056
1906..............	58,442	73,288	131,730
1907..............	69,557	64,360	133,917
1908..............	91,077	63,803	154,880
1909..............	74,047	70.903	144,950
1910..............	48,089	94,328	142,417
1910–11 (9 months).	44,615	122.004	166,619

Infectious Disease Among Horses.

A circular has been issued from the office of the Chief Sanitary Officer, under date of May 10, approved by the Chairman and Chief Engineer, calling attention to a fatal infectious disease of horses, known locally by the names of *morriña de cadera, murrina, and derrengadera*, prevalent among native horses in the Republic of Panama, and in the Canal Zone. It first came to the notice of the authorities through an outbreak among the animals at Ancon and Gatun corrals a little over a year ago. The epidemic was brought under control by the adoption of certain methods tending to guard against the mechanical transmission of the disease. The disease, so far as known, is uniformly fatal to horses and mules. It lasts from a few weeks to several months, and may be recognized by the following signs:

General bodily weakness, the animals falling away in flesh and their coat becoming rough and staring. Fever is present at intervals, lasting from one to six or seven days, and, during these periods, the animals have a droopy appearance. At these times, there is frequently noticed a watery or mucous discharge from the eyes; later, toward the end of the disease, there may be some swelling of the lower part of the legs, or of the lower abdomen or sheath. At this time, their gait is frequently staggering in character, and there is weakness or partial paralysis of the haunches. Little spots of redness (hemorrhage) can be noticed on the inner surface of the whites of the eyes, and on the mucous membrane of the nose. A few days before death, the animals lean against the stalls and fences, and at these points of contact with the body, sores break out from which the virus of the disease escapes.

It has been noted that during the illness of the animals, their appetites are unimpaired; in fact, they seem to be abnormal. The disease is carried from infected animals to well ones by flies lighting on the sores, cuts, and galls of the sick, and transferring the virus to the sores, cuts, and galls of the well animals. It may be also transmitted by persons, who, in the act of dressing such sores or galls, carry the virus from sick to well animals on their hands, or any instruments that may be used.

The following precautions should be taken against the spread of the disease: All wounds, sores, galls, cuts, or other evidences of broken skin on suspected or infected horses or mules, as well as on animals that are not ill, should be thoroughly protected from flies by dressings impregnated with a two to five per cent solution of cresolin, kreso, or the larvacide manufactured by the Commission. These dressings should be kept in place by a material, such as bagging. The halters, instruments, and hands of attendants or other persons coming in contact with infected animals should be properly cleaned and thoroughly disinfected, for which purpose, a solution of some of the disinfectants mentioned above should be used. Stray animals should not be impounded in or near Commission corrals. All animals having a temperature above 101 degrees Fahrenheit should be isolated in a screened stable for observation and diagnosis by microscopic blood examination, and all such animals in the Canal Zone should be reported by telephone to the Board of Health laboratory at Ancon, in order that such blood examinations may be made.

Sanitary inspectors, and the police, are required to report all native, or other animals suspected of having the disease.

Ancon Crusher.

A statement of the rock crushed at Ancon quarry during the two weeks ending June 3, follows:

Date.	Hours worked.	Cubic Yards.
May 22..........................	6:15	2,024
May 23..........................	5:45	2,266
May 24..........................	3:35	1,070
May 25..........................	4:45	1 070
May 26..........................	5:20	1,796
May 27..........................	40	*688
Total..........................	26·20	8,914

*Crusher shut down, no power.

May 29..........................	5:40	1,808
May 30..(Holiday)..............	....	....
May 31..........................	6:35	2,870
June 1..........................	6:40	2,885
June 2..........................	6:30	2,306
June 3..........................	6:35	2,572
Total..........................	30:00	12,441

Seventh Day Adventists to Rebuild.

A new building, to replace the one burned in the Colon fire, will be erected by the Seventh Day Adventist Conference on a lot given for the purpose by the Panama railroad at the corner of Fourteenth and Bolivar streets. The building will be a two-story frame structure, the church occupying the lower floor, with the apartment for the resident staff of the Conference above. No provision will be made for printing plant and offices, as in the former building. The church will be reerected at a cost of $4,000 gold. There are 500 adherents of the sect in the West Indian Conference, which includes the Canal Zone, and the territory surrounding.

SOCIAL LIFE OF THE ZONE.

Church Notes.

The Rev. Victor M. Kennedy, agent of the British and Foreign Bible Society for the Isthmus of Panama, has been called to the temporary charge of the Baptist church at Gorgona. Mr. Kennedy has been on the Isthmus about one year, taking charge, in addition to his duties as agent of the Bible Society, of the work of the Baptist church, a post left vacant by the death of the Rev. J. H. Sobey. The Rev. Mr. Witt has been assigned to that work, leaving Mr. Kennedy free to supply the pulpit in Gorgona during the absence, on leave, of the Rev. J. L. Wise, superintendent of the Baptist Mission on the Isthmus. Services are held at the Commission chapel, as follows: Every Sunday morning at 11 o'clock, and on the first, third and fifth Sunday evenings at 7:45 o'clock; the Rev. Mr. Kennedy, preacher. On Wednesday evenings, prayer meeting at 7:45. On the second Sunday evening in each month, service of the Protestant Episcopal Church, under Chaplain Henry A. Brown. On the fourth Sunday evening in each month, the united Christian bodies in Gorgona hold a "Sunset song service" in the Commission clubhouse, at 7 o'clock, when there is an average attendance of 75.

The Rev. Harry Compton has arrived on the Isthmus from Delaware, Ohio, to take charge of the missionary work of the Methodist church as superintendent. Up to a year ago he had spent twenty-seven years in South America as representative of the Methodist Mission Board, his field having been in Chile, Argentina, Uruguay, and Ecuador. For eight years he had charge of the government normal schools of Ecuador. Mrs. Compton and her daughter will arrive on the Isthmus in August. The Rev. W. W. Gray, who has been superintendent of the Methodist work on the Isthmus, accompanied by Mrs. Gray, left for the States on May 31.

The Praise and Song Association of Pedro Miguel, is a recently formed church organization, which holds meetings in the social hall on Thursday nights. The Sunday school at Pedro Miguel has an enrollment of 40 pupils, and an average attendance of 30. A preaching service is held every Sunday evening at the social hall, the duty being taken by the Rev. A. A. Nellis, the Rev. Carl H. Elliott, the Rev. Charles Ports, and Mr. A. E. Soule.

Decoration Day Observance.

On Decoration Day, a memorial service was held in St. Luke's hospital chapel in Ancon, under the auspices of the Canal Zone Department of the Army and Navy Union of America, when there were present about 200 men. Among these were representatives of the Uniformed Rank of the Knights of Pythias, a detachment of sailors from the *U. S. S. Birmingham*, and a full company of U. S. Marines from Camp Elliott. The memorial address was delivered by Major Henry A. Brown, chaplain, Corps of Engineers, U. S. A.

Following the service, the men marched to Ancon cemetery, where memorial exercises were held, and a detachment of marines went to Flamenco Island to hold services at the graves of the soldiers and sailors buried there.

At Camp Elliott, Memorial Day was observed by a program of athletic events in the afternoon, and in the evening, the Marine minstrels gave a performance in the gymnasium, in which forty men took part.

Salvation Army Institute.

The social institute of the Salvation Army, which was destroyed in the fire of March 23, in Colon, will be rebuilt by the Commission, and two buildings will be brought from Tabernilla for this purpose. The new building will be similar to, although somewhat larger, than the old one. The ground story will contain a restaurant and kitchen, reading room, dormitory, and store rooms; and the second story will be quarters for the use of the resident head of the work. The Salvation Army hall on D street, which was constructed about one year ago at the expense of the organization, was also burned, and, with its furnishing and equipment, represented a loss of about $5,000. It is proposed to erect a similar hall as soon as sufficient funds can be raised. The adjutant has received $500 from the Army headquarters in London with which to carry on the work. The territorial commander is now in London attending a conference called by General Booth. On his return he will visit the Isthmus in July.

The restaurant of the institute was largely patronized by Canal employes, especially those at work on the docks, and in the vicinity of Mount Hope. According to the records of the week of April 1 to 8, a fortnight before the destruction of the building, the number of meals supplied was 1,095. An average of 50 beds a night were occupied.

Officers of Volunteers.

In reply to a cable message from the Chairman of the Commission to the effect that employes desire to compete for appointments as officers of volunteer forces, and asking whether examinations can be held on the Isthmus, the Adjutant General of the Army states:

> Persons, who are fully eligible under the requirements of general orders, No. 57, War Department, 1909, copy herewith, for examination as to their fitness to hold commissions in the volunteers, may be examined on the Isthmus, but candidates for such examination must establish their eligibility before the War Department, before their examinations can be ordered.

The examinations are for the purpose of securing a list of persons specially qualified to hold commissions in any volunteer force, organized at any time under authority of Congress, other than a force composed of organized militia; and only such persons are eligible as may have served in the regular army, a volunteer army of the United States, the organized militia, or as may have pursued a regular course of instruction in any military school of the Army, or have been graduated from an institution in which an officer of the Army or Navy has been detailed as instructor, after having creditably pursued the course of military instruction. The rules governing applications for examination are established by the general orders of the War Department, referred to above, as follows:

* * * * * * * * * * * * *

> No applicant will be examined who is not a citizen of the United States or has not declared his intention to become such; who, in the judgment of the board, is not physically qualified to discharge all the duties of an officer in active service; who has any mental infirmity or deformity of body, or whose moral fitness has not been clearly established; who shall be less than 21 years of age, or who, being an applicant for commission as second lieutenant, shall be more than 30, as first lieutenant more than 35, as captain more than 40, as major more than 45, as lieutenant-colonel more than 50, or as colonel more than 55 years of age.
>
> No person shall be examined unless he has a letter from the War Department authorizing his examination.
>
> If an applicant has served in the Regular Army of the United States, or in any of the volunteer forces of the United States, or in the organized militia of any State or Territory, or the District of Columbia, he shall submit his discharge papers for each term of service; if still in service in any of the organizations mentioned, he shall submit recommendations of his immediate and higher commanders.
>
> If an applicant has attended or pursued a regular course of instruction in any military school or college of the United States Army, or has graduated from any educational institution to which an officer of the Army or Navy has been detailed as superintendent or professor pursuant to law, he shall be required to present the diploma or certificate of graduation from such military school, college, or educational institution.
>
> Applications for examination, accompanied by recommendations and other documents of a commendatory character, as above indicated, should be made to the adjutant general of the State, Territory, or District of Columbia, according to the legal residence of the applicant, in the month of May or November, to the end that the governor of the State or Territory, or the commanding general of the National Guard of the District of Columbia, may forward the accumulated applications, with his recommendations in each case indorsed thereon, to the Adjutant General of the Army, about January 1 and July 1 of each year: *Provided*, That persons who have served in the Regular Army or Navy of the United States, or in the United States Volunteers, shall be authorized to send their applications and the papers therewith, direct to the Adjutant General of the Army. * * * * * * * * * *

PERSONAL.

Mr. Joseph Bucklin Bishop, accompanied by his wife and daughter, sailed for the States on June 7, on the *Cristobal*, for his annual leave of absence.

Special orders No. 120 of the War Department, dated May 23, direct the transfer of Major Edgar Jadwin, Resident Engineer at Cristobal, and Capt. Horton W. Stickle, Assistant Engineer at Cristobal, from the Canal work, as soon as their services can be spared. Major Jadwin will report to the Chief of Engineers at Washington for assignment to duty, and Captain Stickle will report at Wilmington, N. C., to relieve the engineer officer at present stationed there.

Good Conduct of Prisoners.

Seventy-one of the prisoners at the Canal Zone penitentiary at Culebra have earned a total of 90 points in good conduct during the three months ending May 24, and have, therefore, been promoted to grade B, and have had their shackles removed.

The prisoners are graded on entering the penitentiary into two classes, outside and inside men, according as it is possible to utilize their services within or outside of the prison. The outside men are graded A, B, and C, the first class being clothed in stripes and wearing ball and chain; the second being clothed in stripes and not wearing ball and chain; and the third class wearing unstriped gray clothes and no shackles. The inside prisoners are graded D and E. Grade D men wear stripes, and grade E men wear unstriped gray. The course of promotion for outside men is from stripes and shackles to a plain gray uniform, and for inside men, from stripes to plain gray. A set of prescribed rules is placed before the prisoners, and for strict observance of them they are given credit of 30 points a month, and when they have accumulated 90 points they are promoted.

In the period of three months ending May 24 in addition to the 71 men whose shackles were removed, 12 prisoners were promoted to grade E, and clothed in the new gray uniform, which has been manufactured in the penitentiary tailor shop.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

COROZAL.

An informal "Social" was held on Friday night, and the building was crowded. There was a program of music, readings, and dumb bell exercises.

The membership of the Corozal association in May was 204, or 97 per cent of the total population.

CULEBRA.

In the bowling match Saturday night, Culebra won two out of three games from Gorgona. The scores are, as follows:

Gorgona.				Culebra.			
Dunlop	99	80	99	Hepler	81	88	79
Miller	80	80	78	Dundas	83	83	68
Otis	90	85	108	Crain	78	82	83
Misal	85	101	87	Judge	96	98	89
Atkins	79	87	99	Mengel	99	93	86
Total	433	433	471		437	444	405

The 100, or over, duckpin scores for the week ending June 3, are, as follows: Mengel, 110, 109, 111, 100; Hepler, 114; Holden, 105; Huttlemeier, 100, 105, 102, 112; Kersey, 101; Case, 105, 103, 106; Baumer, 100.

On Saturday night, June 3, the Culebra indoor baseball team defeated the Cristobal team by a score of 16 to 10. Batteries: Cristobal—Russell and McSparran; Culebra—Tupper and Cushing.

The Culebra baseball team defeated the Corozal team in a game of outdoor baseball at Corozal, on the morning of May 30. The score was 3 to 2. Batteries: Corozal—Garlington and Cunningham; Culebra—Sollenberger and Cushing.

EMPIRE.

The following high scores were bowled in duckpins during the past week: Rodeghiero, 107, 108, 111, 106; Potter, 102, 121; Goolsby, 102, 101; Parkis, 103, 111; Garrett, 110; Giavelli, 102, 112.

The Gatun duckpin team took two out of three games from the local team on Saturday night, June 3.

A mock trial will be the feature of the literary society meeting on Friday evening, June 9.

The high school of the Canal Zone will give its entertainment on Friday night, June 16, consisting of a cantata, entitled "Wreck of the Hesperus," and a play, "Our Bob."

GORGONA.

Gatun indoor baseball team forfeited to Gorgona on Saturday night. The game was to have been played at Gatun.

The Gorgona athletes have started training for the Fourth of July meet. A meeting was held May 31, and Louis P. Robitoy was elected manager.

A wrestling class has been organized to meet every Wednesday evening. A wrestling mat has been secured, and a good live class is anticipated. Next Wednesday, in addition to the practice work, a match bout is scheduled between A. A. Simka and G. T. Aitken, and another between J. E. Ridge and L. Cole. All members interested in wrestling are urged to join the class.

A new class in Spanish for beginners has been organized, and all men interested are requested to join as promptly as possible. Enough have already enrolled to insure a good class.

The high school students will present their entertainment, consisting of a musical program and a two-act comedy, on the evening of June 6.

Culebra took three straight games in bowling from Gorgona, on Saturday night, with the following scores:

Culebra.				Gorgona.			
Gould	92	76	84	Davenport	80	85	89
Huttle	89	103	97	J. Orr	64	71	81
Conlan	96	76	87	Siebt	90	88	60
Kersey	91	93	73	Simka	88	80	89
Case	96	96	102	Haggarty	89	80	80
Total	464	444	443		411	404	399

GATUN.

A large audience attended the high school entertainment on Wednesday evening, May 31. A chorus of forty voices sang "The Wreck of the Hesperus." The soloists were Miss Hackenberg, soprano; Mr. Ross, tenor; Mr. Hull, baritone. A farce in two acts entitled, "Mr. Bob," included the following pupils: John Maloney, '13. Helen Calkins, '13; Marguerite Stevens, '11; Robert Somerville, '12; Corrine Browning, '13; Myrtle Lindersmith, '13. C. E. Jennings acted as musical director; C. C. Carr, as manager, and Fred. Jackson, '13, as property man.

Alex. J. McLane won a cue as first prize in the "High run" pool contest for the month of May. A cue will be given also for the highest run made during June. A handicap pool tournament was started June 5, the first prize to be a gold medal; second, cuff buttons. For the 3-cushion billiard tournament a gold medal will be given as first prize, and a silver medal as second prize.

Louis Durand won a Gatun pennant for rolling the highest game of duckpins during May. John Luckey received a pennant for high game in ten pins. H. S. Adams and W. A. Wells received second prizes. Prizes for the month of June will be announced later.

A "Smoker" will be held at the clubhouse on June 17. Every man in Gatun is invited to attend.

The "Boilers" from Gorgona won the game of indoor baseball from the "Locks" of Gatun, on Saturday, June 3; score, 18 to 9.

Jess T. Hopkins, physical director of Gorgona Y. M. C. A., and head of the Health League on the Isthmus, led the discussion on "Health," Sunday evening, June 4. Another phase of the subject will be taken up on June 11.

All members are invited to suggest the names of new books for the library. A large order will be placed in a few days.

Application blanks for the Fourth of July athletic meet at Cristobal may be secured at the office. It is hoped that a large number of Gatun men will enter the meet.

Mr. DePoorter challenges the pool players of Gatun that he will make 15 balls or no count against any one, straight pool, 45 balls to constitute a game.

CRISTOBAL.

The Cristobal literary and debating society held an open patriotic meeting on Wednesday night, May 31. There was music by the orchestra, popular singing by the audience, and solos by R. C. Mosher and Dr. Hill. Judge Jackson made an address. This is the first of a series of open meetings to be held every month.

The lineup and results in the local basketball contest, Thursday night were, as follows:

Luce.		Sterner.
Simonds	R F	Thompson
Luce	L F	Sterner
Jordon	C	Forstrom
Polson	L G	Humphreys
Thomas	R G	Wetherbee

Summary: Baskets thrown—Simonds 1, Luce 9, Sterner 10, Forstrom 1. Fouls thrown—Luce 6, Simonds 2, Sterner 8. One point awarded from foul.

Final score—Sterner 31, Luce 28.

Kavan.		Morton.
Ford	R F	Herrington
Martin	L F	Schleger
Jaap (Johnson)	C	Levy
Cousineau	L G	Seaborn
Vitel	R G	MacSparran
Newcomb (Sub.)		

Summary: Baskets thrown—Herrington 1, Schleger 7, Martin 1. Fouls thrown—Herrington 2, Ford 1, Johnson 1.

Final score—Morton 18, Kavan 4.

Moving pictures were given Saturday and Monday nights, the latter being the films and outfit belonging to the U. S. S. cruiser, *Birmingham*, anchored in Colon Harbor.

The standing of the Isthmian duckpin tournament at present is, as follows:

	Played	Won	Lost	Per cent
Cristobal	36	29	7	.805
Empire	36	21	15	.583
Culebra	42	21	21	.500
Gatun	42	16	26	.381
Gorgona	36	9	27	.250

The new Cristobal alleys will be opened with appropriate ceremonies on Saturday, June 10.

The following scores of 100, or over, were made during the week on the alleys: Wood, 105, 109; Furlong, 106, 102, 101, 100; Wheeler, 107, 108; Bullard, 101, 102; Gibson, 105; Louch, 102, 109, 115, 100; Jacques, 107; DeCora, 100, 100; Smith, 103, 115, 100; Barrett, 100, 104.

The following 200, or over, scores were made with bigpins during the week: Blackburn, 247; Bullard, 200.

PORTO BELLO.

The Porto Bello chess club started a handicap tournament on Wednesday night, sixteen players being present.

The weekly prize problem contest was held on Thursday night. The prize was won by Cornelison.

Last Sunday evening's song service was well attended. A vocal solo was rendered by Mrs. Van Fleet.

On Tuesday, May 30, a dance was held at the clubhouse.

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal and Colon, during the week ending June 3, 1911:

Cristobal, May 29, from New York, with 20,815 barrels cement for Atlantic Division; 20,815 barrels cement for Pacific Division; 280 barrels coal tar for stock.

Prinz Joachim, May 29, from New York, with 200 cases fuses for stock.

Galveston, May 30, from Bridgeton, with 19,500 cases dynamite for stock.

Allianca, May 30, from New York, with 8 cases dredging sleeves, 20 cases dredge buckets for Atlantic Division; 100 car springs for Central Division; 13 steel castings for Mechanical Division; 15 cases coupon books for Examiner of Accounts; 24 barrels washing soda, 40 carboys acid, 12 cases sundries for Sanitary Department; 17 bundles pails, 27 cases A. B. material, 72 crates fire brick, 220 drums ships' bottom paint; 29 pigs tin, 19 cases cardboard for stock; and a miscellaneous cargo, the whole consisting of 716 packages, weighing 98 tons.

Zacapa, June 1, from New York, with 29 bundles brooms for stock.

Abangarez, June 1, from New Orleans, with 435 bales alfalfa hay, 165 bales colored cotton waste, 84 crates fire brick, 23,616 feet yellow pine lumber for stock.

Prinz Eitel Friedrich, June 3, from New York, with 200 barrels carbolic acid for stock.

Agenoria, June 3, from New York, with 13,397 barrels cement for Atlantic Division; 13,397 barrels cement for Pacific Division.

Haakon VII, June 3, from Baltimore, with 1,800 pieces angle reinforcement, 276 rolls concrete reinforcement for Atlantic Division; 77 tons lock construction material for Pacific Division; 300 car wheels for Mechanical Division; 175 pieces steel channels, 218 pieces steel bars, 345 pieces steel angles, 47 pieces steel beams, 383 tons coke, 500 cases dynamite, 1,139 bundles sheet iron, 175 kegs track spikes for stock.

Band Concerts.

A concert will be given by the Isthmian Canal Commission Band at Hotel Tivoli, Ancon, C. Z., on Sunday, June 11, 1911, at 7:30 p. m. The program follows:

1	March—*Give the Countersign*	Scouton
2	Selection—*Robin Hood*	De Koven
3	Waltz—*Skaters*	Waldteufel
4	Overture—Norma	Bellini
5	Wooden Shoe Dance—*Dutch Kiddies*	Trinkaus
6	Serenade—*Andolusian*	Bonnet
7	Selection—*Woodland*	Luders
8	Idyll—*Love's Message*	Brooks
9	Galop—*At the Races*	Barnard

A concert will be given by the Isthmian Canal Commission Band at Cristobal, C. Z., Wednesday, June 14, at 8 p. m. The program follows:

1	March—*Give the Countersign*	Scouton
2	Selection—*Robin Hood*	De Koven
3	Paraphrase—*Nearer My God to Thee* Assisted by pupils from the public schools.	Reeves
4	Overture—*Norma*	Bellini
5	Wooden Shoe Dance—*Dutch Kiddies*	Trinkaus
6	Serenade—*Andolusian*	Bonnet
7	Waltz—*Skaters*	Waldteufel
8	Medley—*Southern Plantation*	Conterno
9	Galop—*At the Races*	Barnard

CHAS. E. JENNINGS, *Musical Director.*

The next concert will be given at Culebra, Sunday, June 17, at 5:45 p. m.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending June 14, 1911, (75th meridian time):

DATE.	High.	Low.	High.	Low.
	A. M.	A. M.	P. M.	P. M.
June 8	1.25	7.25	1.36	7.56
June 9	2.18	8.16	2.22	8.42
June 10	3.03	9.01	3.04	9.24
June 11	3.42	9.43	3.43	10.03
June 12	4.17	10.23	4.20	10.42
June 13	4.52	10.59	4.54	11.17
June 14	5.23	11.35	5.28	11.52

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, June 3, 1911. All heights are in feet above mean sea level.

DAY AND DATE.	STATION.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun., May 28	128.0	94.0	46.6	16.7	16.6
Mon., May 29	127.8	94.0	46.6	16.4	16.2
Tues., May 30	131.2	96.2	48.5	16.1	16.0
Wed., May 31	128.6	95.0	48.7	16.1	15.7
Thurs., June 1	126.8	93.3	46.4	15.6	15.6
Friday, June 2	127.4	93.6	46.5	15.5	15.4
Sat., June 3	127.1	93.6	46.5	15.4	15.3
Height of low water	.... 125.0	92.0	44.0		

The following vessels arrived at or departed from the port of Balboa during the week ending June 3.

Arrivals—May 28, *Limari*, from Valparaiso; May 29, *Pennsylvania*, from San Francisco; *Guatemala*, from Valparaiso; *Manavi*, from Buenaventura; June 1, *Stanley Dollar*, from San Francisco; June 2, *Acapulco* from San Francisco.

Departures—May 29, *Mantaro*, to Callao; May 30, *Quito*, to Guayaquil; May 31, *Chile*, to Guayaquil; June 2, *City of Sydney*, to San Francisco; *Limari*, to Valparaiso.

OFFICIAL CIRCULARS.

Manufacture of Bushings.

CULEBRA, C. Z., June 2, 1911.

CIRCULAR No. 396:

A special turret lathe has been installed in the Gorgona shops for the economical manufacture of bushings.

Effective June 15, 1911, all bronze and carbon steel bushings, of which the maximum diameter does not exceed five and three-quarters (5¾) inches, will be made by the Mechanical Division, except that bushings required in an emergency, and bushings of which the probable consumption per annum will not exceed three, may be made in other shops having proper facilities.

When the finished dimension of any surface of bushings ordered cannot be given in advance, a dimension should be prescribed for the surface that will leave sufficient metal for finishing to the required size, and the surface or dimension thereof marked "rough machine."

Effort will be made to standardize bushings wherever possible, with the view to reducing to a minimum the number of different sizes and shapes.

H. F. HODGES,
Acting Chairman, Isthmian Canal Commission.
Second Vice-President, Panamo Railroad Company.

Surcharge on Materials Sold.

CULEBRA, C. Z., June 3, 1911.

CIRCULAR No. 169-H:

In making sale of obsolete or unserviceable material, including sale at auction, sales at an upset price after sale by auction has not been effected, and all sales made at an appraised value, no surcharge will be added to prices accepted for such sales.

H. F. HODGES,
Acting Chairman and Chief Engineer.

Applicants for Medical Examination.

CULEBRA C. Z., June 2, 1911.

HEADS OF DEPARTMENTS AND DIVISIONS:

Referring to the Chairman's circular of the 3d ultimo, requesting that when applicants for employment are sent to authorized examining physicians of the Commission for medical and physical examination, they be given two copies of Form 167 C. E., for execution by the examining physician, instead of one copy of the above form, as had been the practice in the past.

The District Physician at Culebra states that applicants for employment are still being sent to him, accompanied by only one copy of Form 167 C. E.

Will you kindly give the necessary instructions in order that the provisions of the Chairman's circular of May 3, 1911, may be complied with.

By direction of the Acting Chairman.

W. H. MAY, *Secretary to the Chairman.*

Nonhousekeeping Quarters.

CULEBRA, C. Z., May 30, 1911.

DISTRICT QUARTERMASTERS:

Hereafter assignments to nonhousekeeping quarters will be made from applicants on the nonhousekeeping list.

Applicants for quarters on the No. 1 and No. 2 lists can have their names placed on the nonhousekeeping list if they make application in the regular way.

C. A. DEVOL, *Chief Quartermaster.*

Permits for Gatun Labor Train.

GATUN, C. Z., May 27, 1911.

TO ALL CONCERNED:

Permits for the Gatun-Culebra labor train are not transferable. Any such permits found in the hands of parties not entitled thereto will be taken up, and, if it is found that such permit has been sold or transferred by the party to whom it was originally issued, the facts will be reported to the Chairman and Chief Engineer for his action.

WM. L. SIBERT, *Division Engineer.*

Sale of Washstands, Roofing Iron, Etc.

Sealed bids will be received at the office of the Depot Quartermaster, Mount Hope, C. Z., until 2 p. m., June 14, 1911, for the purchase of 175 second hand washstands, and a miscellaneous quantity of French galvanized roofing iron. The right is reserved to reject any or all bids or any parts thereof. Articles can be seen at Mount Hope during working hours Bids must be plainly marked "Proposals for purchase of washstands and galvanized roofing, to be opened June 14, 1911" and addressed to

C. NIXON, *Depot Quartermaster.*

Commissary Prices.

There have been no changes in the prices of cold storage articles from the list published in THE CANAL RECORD last week.

LOST—At Gorgona, May 20, a watch fob of a polished sea bean with gold band and gold figure of a kangaroo on a silk ribbon. Reward if returned to Commission clubhouse, or Chas. B. Bordt, Gorgona, C. Z.

Rainfall from May 1 to 31, 1911, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	2.19	11	11.04
Balboa	1 64	11	8.85
*Miraflores	1.55	13	10.16
Pedro Miguel	1.87	13	9.57
Rio Grande	2 97	11	16.89
Central Section—			
Culebra	2.33	25	14.86
*Camacho	3.03	25	18.11
Empire	2.57	11	13.74
Gamboa	4.02	11	14.53
*Juan Mina	4.10	11	15.90
Alhajuela	3.18	13	16.11
*El Vigia	1.74	25	10.62
*Gorgona	5.45	13	17.56
San Pablo	2.67	15	10.25
Tabernilla	2.84	5	10.53
Bohio	3.74	23	12.32
*Trinidad	2.61	18	18.20
*Monte Lirio	3.90	11	19.70
Atlantic Section—			
Gatun	3.22	16	19.14
*Brazos Brook	2.55	10	19.92
Cristobal	2.44	6	17.13
Porto Bello	5.14	2	19.25
*Nombre de Dios	6.77	2	16.74
*Bocas del Toro	1.25	23	6.59

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

May Rainfall for Three Years.

STATION.	1909	1910	1911	Station Average	Years of Record	Rai'y days 1911
Pacific Section—	*Ins.*	*Ins.*	*Ins.*	*Ins.*		
Ancon	9.10	9.89	11.04	8.85	13	25
Balboa	9.69	8.88	8.85	7.06	15	25
Miraflores	8.75	10.39	10.16	9.77	3	23
Pedro Miguel	8.50	13.24	9.57	11.51	4	26
Rio Grande	7.32	10.96	16.89	11.45	7	25
Central Section—						
Culebra	7.36	10.50	14.86	11.31	10	22
Camacho	9.34	12.05	18.11	12.43	5	24
Empire	7.73	11.08	13.74	10.12	7	25
Gamboa	15.37	11.09	14.53	11.01	30	24
Alhajuela	14.32	11.50	16.11	12.69	11	25
El Vigia	15.54	10.47	10.62	12.21	3	22
Gorgona	.....	8.06	17.56	12.96	7	18
San Pablo	9.00	9.93	10.25	10.13	4	21
Tabernilla	10.07	9.15	10.53	11.14	4	22
Bohio	13.69	14.14	12.32	13.84	17	26
Trinidad	10.79	11.21	18.20	14.65	4	27
Monte Lirio	9.29	11.84	19.70	15.84	4	29
Atlantic Section—						
Gatun	8.98	15.68	19.14	15.93	7	28
Brazos Brook	7.51	11.27	19.92	13.52	5	29
Cristobal	7.21	12.09	17.13	12.42	41	28
Porto Bello	9.69	9.30	19.25	14.82	4	26
Nombre de D	8.11	......	16.74	12.42	2	23

WEATHER CONDITIONS, CANAL ZONE, MAY, 1911.

STATIONS.	Press're (reduc'd to mean of 24 hours.)	Temperature.					Mean relative humidity.	Precipitation.			Wind.				
		Mean.	Maximum.	Date.	Minimum.	Date.		Total inches.	Station average.	Number of rainy days.	Total movement (in miles.)	Prevailing direction.	Max. velocity (in miles.)	Direction.	Date.
Cristobal	29.847	79.5	88	21	72	9	90	17.13	12.42	28	4,148	S.E.	30	S.W.	15
Culebra	29.839	79.2	92	7	70	12	92	14.86	11.31	22	3,505	N.W.	23	E	18
Ancon	29.835	79.1	92	30	69	8	89	11.04	8.85	25	3,872	S.E.	23	S.E.	10

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Advance	P. R. R.	Tuesday	June 6
Colon	P. R. R.	Monday	June 12
Allianca	P. R. R.	Saturday	June 17
Ancon	P. R. R.	Saturday	June 24
Advance	P. R. R.	Friday	June 30
Colon	P. R. R.	Friday	July 7
Allianca	P. R. R.	Thursday	July 13
Panama	P. R. R.	Wednesday	July 19
Advance	P. R. R.	Tuesday	July 25
Colon	P. R. R.	Monday	July 31
Allianca	P. R. R.	Saturday	Aug. 5
Panama	P. R. R.	Saturday	Aug. 12
Advance	P. R. R.	Friday	Aug. 18
Colon	P. R. R.	Thursday	Aug. 24
Allianca	P. R. R.	Wednesday	Aug. 30

CRISTOBAL TO NEW YORK.

Ancon	P. R. R.	Tuesday	June 13
Advance	P. R. R.	Sunday	June 18
Colon	P. R. R.	Saturday	June 24
Allianca	P. R. R.	Friday	June 30
Panama	P. R. R.	Thursday	July 6
Advance	P. R. R.	Wednesday	July 12
Colon	P. R. R.	Wednesday	July 19
Allianca	P. R. R.	Tuesday	July 25
Panama	P. R. R.	Monday	July 31
Advance	P. R. R.	Sunday	Ang. 6
Colon	P. R. R.	Saturday	Aug. 12
Allianca	P. R. R.	Friday	Aug. 18
Panama	P. R. R.	Thursday	Aug. 24
Advance	P. R. R.	Wednesday	Aug. 30

NEW YORK TO COLON.

Almirante	U. F. C.	Thursday	June 1
Prinz Aug. Wilhelm	H.-A.	Saturday	June 3
Santa Marta	U. F. C.	Thursday	June 8
Prinz Sigismund	H.-A.	Friday	June 9
Trent	R. M.	Saturday	June 10
Metapan	U. F. C.	Thursday	June 15
Prinz Joachim	H.-A.	Saturday	June 17
Zacapa	U. F. C.	Thursday	June 22
Prinz Eitel Friedrich	H.-A.	Friday	June 23
Magdalena	R. M.	Saturday	June 24
Almirante	U. F. C.	Thursday	June 29
Prinz Aug. Wilhelm	H.-A.	Saturday	July 1
Santa Marta	U. F. C.	Thursday	July 6
Clyde	R. M.	Saturday	July 8
Prinz Sigismund	H.-A.	Friday	July 7

COLON TO NEW YORK.

Zacapa	U. F. C.	Thursday	June 8
Prinz Eitel Friederich	H.-A.	Saturday	June 10
Magdalena	R M.	Tuesday	June 13
Almirante	U. F. C.	Thursday	June 15
Prinz Aug. Wilhelm	H.-A.	Tuesday	June 20
Santa Marta	U. F. C.	Thursday	June 22
Prinz Sigismund	H.-A.	Saturday	June 24
Clyde	R. M.	Tuesday	June 27
Metapan	U. F. C.	Thursday	June 29
Prinz Joachim	H.-A.	Tuesday	July 4
Zacapa	U. F. C.	Thursday	July 6
Prinz Eitel Fredrich	H.-A.	Saturday	July 8
Atrato	R. M.	Tuesday	July 11

NEW ORLEANS TO COLON.

Atenas	U. F. C.	Saturday	June 3
Cartago	U. F. C.	Wednesday	June 7
Turrialba	U. F. C.	Saturday	June 10
Parismina	U. F. C.	Wednesday	June 14
Abangarez	U. F. C.	Saturday	June 17

COLON TO NEW ORLEANS.

Abangarez	U. F. C.	Thursday	June 8
Heredia*	U. F. C.	Thursday	June 8
Atenas	U. F. C.	Thursday	June 15
Cartago*	U. F. C.	Thursday	June 15
Turrialba	U. F. C.	Thursday	June 22
Parismina*	U. F. C.	Thursday	June 22

The Hamburg-American steamers leave Colon for New York via Kingston at 10 a. m. on sailing dates. The *Prinz August Wilhelm* and *Prinz Joachim* call at Santiago, Cuba, on both outward and homeward voyages. A ship will leave Colon for Bocas del Toro at 5 p. m. on June 14 and July 12, and for Port Limon at 5 p.m. on June 14.

The Leyland line steamer *Louisianian* sails for New Orleans, via Port Limon, on or about Sunday, June 25.

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships designated (*) for New Orleans via Port Limon and Puerto Barrios on Thursday at 4 p. m.; ships for New York via Kingston on Thursday at 11 a. m.; for Bocas del Toro on Monday at 6 p. m.

CANAL RECORD

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The Canal Record

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Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Excavation in Culebra Cut.

The excavation in Culebra Cut in May was the greatest of record for that month—1,298,600 cubic yards, as compared with 1,126.963 cubic yards for May, 1909. All but 360 cubic yards of this was excavated by steam shovel, the proportion of rock and earth being 1,149,886 and 148,354 cubic yards, respectively. The average number of shovels at work was 38.62, the working days 26, and the average excavation per shovel per day was 1,293 cubic yards. At the end of the month there had been excavated in this section 64,113,849 cubic yards, and there remained 20,072,875 cubic yards, the excavation, therefore, being over 76 per cent completed.

Canal Work in May.

The grand total of Canal excavation to June 1 was 140,321,112 cubic yards, leaving to be excavated 42,216,654 cubic yards, or less than one-fourth of the entire amount for the completed Canal.

The total for May was 2,570,592 cubic yards, as compared with 2,477,618 cubic yards in May, 1910, and 2,896.095 cubic yards in May, 1909. All the excavation was "work excavation," there being no "plant excavation."

The dry excavation amounted to 1,483,463 cubic yards and was principally by steam shovels. The dredges removed 1,062,225 cubic yards, and 24,904 cubic yards were sluiced, in addition to the amount pumped into Gatun Dam by suction dredges. The progress on the locks at Gatun, Pedro Miguel, and Miraflores is referred to elsewhere in this issue.

In the Atlantic Division, the total excavation was 596,337 cubic yards. Of this total, 82,159 cubic yards were dry excavation, and the remainder was removed by the dredges in the Atlantic entrance.

The total excavation in the Central Division was 1,328,883 cubic yards, of which all but 500 yards were from the prism.

In the Pacific Division, the total excavation was 645,372 cubic yards, 548,047 cubic yards of which were taken out by the dredges at the Pacific entrance.

A detailed statement of the excavation, and a summary of the work on the locks and dams, follow:

ATLANTIC DIVISION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation.
Dry excavation—	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*
Locks, Dam and Spillway..................	17,677	....	17,677
Mindi..................	64,482	....	64,482
Total..................	82,159	....	82,159
Wet excavation—			
Atlantic entrance	514,178	....	514,178
Locks, Dam and Spillway..................	....	....	....
Total..................	514,178	....	514,178
Total wet and dry excavation.........	596.337	....	596.337

CENTRAL DIVISION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation.
Dry excavation—			
Culebra Cut............	1,298,600	....	1,298,600
Chagres section........	4,879	....	4,879
Obispo Diversion......	500	....	500
Wet excavation—			
Chagres section........	24,904	....	24,904
Total..................	1,328,883	....	1,328,883

PACIFIC DIVISION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation.
Dry excavation—			
Locks, Dams and Spillways..................	63,880	....	63,880
Diversions..............	....	....	....
Prism, south of Pedro Miguel Locks........	33,445	....	33,445
Total..................	97,325	....	97.325
Wet excavation—			
Pacific entrance	548,047	....	548.047
Miraflores Locks......	....	....	....
Diversions..............	....	....	....
Total..................	548,047	....	548.047
Total wet and dry excavation.........	645,372	....	645,372

TOTAL CANAL EXCAVATION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation.
Dry excavation	1,483,463	....	1,483,463
Wet excavation	1,087,129	....	1,087,129
Total..................	2,570,592	....	2,570,592

Mean rainfall along Canal (twelve stations) 13.78 inches.

By "Work" Excavation is meant excavation actually made for one of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc.; that is, it represents material taken from the area to be occupied by the Canal, and constitutes excavation useful for the completed Canal.

By "Plant" Excavation is meant excavation outside of any of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc. It includes material necessary to be excavated for construction purposes only and is chargeable against the particular plant item for which it is performed, such as Prism, Diversions, Locks, etc.

DAM AND LOCK CONSTRUCTION.

MATERIAL.	Atlantic.	Pacific.	Total.
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*
Concrete laid in locks.	67,844	55.289	123,133
Concrete laid in dams and spillways.......	3,656	....	3,656
Fill placed in dams...	627,099	48,385	675,484

Gatun Locks Excavation Completed.

Excavation in Gatun Locks is finished, all the earth and rock in the chambers south of the caisson sill having been removed. What remains to be dug out is outside of the locks proper, in the approach channel on the north, and this will be excavated by suction dredge down to rock, and the rock will be removed by steam shovels.

The excavation in the locks has been practically completed for some time, but small slides on both banks of the pit prevented actual completion. One on the east bank, half the length of the lower lock, was particularly troublesome, but a toe wall of concrete has been constructed as far north as the caisson sill. and it is believed this will prevent any further movement of the bank. Small slides, amounting to 200 or 300 cubic yards at a time, have been causing considerable inconvenience on the west side of the locks, and these may continue three or four weeks more, or until a portion of the lock wall has been built across the front of the space where the material is sliding. The lock excavation was begun in October, 1906, and there had been removed to June 1. a total of 5,225,000 cubic yards.

Erecting the Lock Gates.

The work of erecting the guard gates in the upper or south locks at Gatun has been begun in accordance with the method outlined in THE CANAL RECORD of May 10. In the east lock, four stories of both leaves of the guard gate are in position, and in the west lock the first story has been erected. None of the outside plates have yet been riveted on. It is planned to erect the south guard gates in both locks, and turn them over to the riveters, who will drive the rivets while the erectors are working on the operating gates. In this way the work will be carried on in two parts, the erectors immediately preceding the riveters, until the whole 92 leaves for all the locks are completed. The contractor expects to have the first guard gates at Gatun erected by the end of July, when riveting will be begun on them, and the construction bridges will be moved northward over the location of the upper operating gates, so that the erection of the second line of gates may be begun Forty men are now at work, and about three times this number will be employed by the end of July.

The second shipment of gate material, about 2,000 tons, has arrived, making a total of about 3,500 tons now on the Isthmus. The contractors' plants in the States are turning out 150 tons of material for the lock gates each day.

Sluicing in Central Division.

Excavation in the lake region of the Canal, between Gatun and Bas Obispo, is now confined to the work of two contractors, one of whom is working at Bohio, and the other at Gorgona, both using a form of sluicing.

At Bohio, E. C. McFarland & Co. are excavating earth and soft rock by the sluicing

NOTES OF PROGRESS.

(Continued.)

method, and hard rock by pan car. They used the sluicing method on a contract of 35,500 cubic yards at Tabernilla, where all of the material was earth. The plant consists of two 8-inch three-stage turbine pumps, driven by an Ames engine of 200-horsepower, and discharging into a 12-inch main, from which there are leads for two monitors. Two or 3-inch nozzles are used, according to the character of the material to be cut. With the 2-inch, 150 pounds pressure is obtained at the nozzle, and with the 3-inch, 100 pounds. At Bohio, about 50 per cent of the material is soft rock and the sluicing plant handles this profitably on a grade as low as one per cent. In May, 15,300 cubic yards were excavated by this method at Bohio, and there still remain to be taken out about 110,000 cubic yards, out of a total of 160,000. It is believed that 110,000 cubic yards can be removed by the sluicing method.

Opposite Gorgona, the contractor, B. B. Duncan, is working with a 12-inch centrifugal pump, which raises water from the river into sluice boxes, through which it carries into the river material excavated with pick and shovel. In May, 9,600 cubic yards were excavated by this method.

Ancon Crusher.

A statement of the rock crushed at Ancon quarry during the week ending June 10, follows:

DATE.	Hours worked.	Cubic Yards.
June 5	6:55	3,296
June 6	6:30	1,913
June 7	7:20	2,479
June 8	8:35	2,588
June 9	8:00	3,066
June 10	6:45	2,738
Total	44:05	16,080

Porto Bello Crusher.

A statement of the work done at Porto Bello crusher, by days, for the week ending June 10, follows:

DATE.	Hours worked.	Cubic Yards.
June 5	3:05	1,773
June 6	5:01	2,142
June 7	6:06	2,769
June 8	6:22	3,080
June 9	5:46	3,054
June 10	6:28	3,241
Total	32:48	16,059

An excursion of the American Bankers' Association to the Canal Zone has been planned for November, 1911.

Work at Porto Bello.

The dock at Porto Bello for loading rock from the quarry upon barges, to be conveyed thence to Colon breakwater, has been completed. It is 128 feet long with a tail track of the same length, and contains two tracks for cars and one track for locomotive cranes. The cars will be loaded in the quarry by locomotive cranes and then hauled to the dock, where two cranes, operating along the front, will lift the rock upon barges.

In order to reduce the quantity of fine rock in the crushed stone for Gatun Locks concrete, a ½-inch screen has been placed in the chute from the crushers. This screen became clogged frequently during the month of May, and on that account, the quantity of rock crushed fell to 58,000 cubic yards. Steps will be taken to accomplish this screening without interfering with the movement of rock through the chute. The small rock screened from the large is being used in municipal work at Porto Bello, and is available for municipal work elsewhere, and for use in making concrete blocks.

The gasoline in a large tank in the rear of a general store at Gorgona exploded on the morning of June 7. Three Americans, and four negroes were burned, none fatally.

CONCRETE WORK IN THE LOCKS.

GATUN LOCKS.

About 67 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of work on June 10, being 1,389,898 cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending June 10, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
June 5	1,104	17:57	4	†124	1:40	2	84	1,312
June 6	1,490	24:29	5	....	....	......	218	1,708
June 7	1,484	24:40	5	506	7:30	2	158	2,148
June 8	1,532	24:45	5	614	8:40	2	150½	2,296½
June 9	1.446	26:29	5	708	8:40	2	178½	2,332½
June 10	1,320	22:39	5	624	8:40	2	149	2,093
*Portable mixers	....	....	......	*322½	....	......	....	322½
Total	8,376	140:59	4.83	2,898½	35:10	2	937¾	12,212½
Previously reported	....	....	......	....	....	......	....	1,377,685¾
Grand total	....	....	......	....	....	......	....	1,389,898

*The 322½ yards shown for the portable mixers are reenforced concrete, and were placed on the following days: June 5th, 64½; June 6th, 45; June 7th, 59½; June 8th, 61½; June 9th, 45½; June 10th, 46½.

†At 8.40 Monday morning, June 5, a carload of sand was accidentally dumped from the trestle at mixer No. 2 onto the mixer engine, resulting in the shutting down of the two mixers. An electric motor was installed and operations resumed the morning of June 7.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is about 79 per cent completed, 661,352 cubic yards, out of a total of 837,400, having been placed at the close of work on June 10. The record for each of the six eight-hour working days of last week, follows:

DATE.	AUXILIARY PLANT.						Large stone.	Total
	2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
June 5	417	8:50	2	84	6:50	1	....	501
June 6	554	10:00	3	96	8:00	1	....	650
June 7	692	11:00	3	45	4:00	1	....	737
June 8	754	24:50	4	27	2:00	1	....	781
June 9	720	20:50	4	84	7:67	1	15	819
June 10	554	16:00	3	40	3:00	1	....	594
Total	3,691	90:50	3.17	376	31:17	1	15	4,082
Previously reported	....	....	......	....	....	......	4,189	657,270
Grand total	....	....	......	....	....	......	4,204	661,352

MIRAFLORES LOCKS.

Over 19 per cent of the concrete for the system of two twin locks at Miraflores was in place on June 10, the total amount on that date being 262,902 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT.							Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
June 5	1,096	25:00	4	....	....	......	290	21:50	3	....	1,386
June 6	830	19:17	4	....	....	......	285	21:50	3	....	1,115
June 7	1,166	26:00	4	....	....	......	366	27:50	4	....	1,532
June 8	930	20:83	4	....	....	......	320	23:75	4	....	1,250
June 9	668	15:50	4	....	....	......	313	21:00	4	....	981
June 10	810	17:17	4	....	....	......	310	22:50	4	....	1,120
Total	5,500	123.67	4	....	....	......	1,884	137:75	3.7	....	7,384
Previously reported	....	....	......	....	....	......	....	....	......	3,693	255,518
Grand total	....	....	......	....	....	......	....	....	......	3,693	262,902

STEAM SHOVEL RECORDS.

Work of Central Division Shovels in May.

During the month of May the total amount of material excavated in the Central Division was 1,328,883 cubic yards, of which 165,897 cubic yards were classified as earth, and 1,162,986 cubic yards as rock. Of this quantity, 1,298,240 cubic yards were removed by steam shovels, 360 cubic yards by bucket cranes, and 1,863 cubic yards by hand. Contractors removed 24,904 cubic yards by sluicing, and 3,516 cubic yards by hand.

The high record for the month was made by shovel No. 206, working 24½ days in the Culebra district, which excavated 54,556 cubic yards of rock. The second best record for the month was made by shovel No. 208, working 26 days in the Culebra district, which excavated 48,908 cubic yards of rock and earth.

The best record for a shovel of the 70-ton class was made by shovel No. 109. working 21 days in the Culebra district, which excavated 30,045 cubic yards of rock and earth.

Shovel No. 218, working in the Empire district, made a high record for one day by excavating 2,945 cubic yards of rock and earth on May 8.

Except where noted, monthly reports are computed by place measurement, while the daily reports are based on car measurement. The best records for the month and for one day are shown below:

BEST RECORDS FOR THE MONTH.

Shovel No.	Cubic Yards.			No. of days at work.
	Earth.	Rock.	Total.	
EMPIRE DISTRICT.				
263	....	44,264	44,264	26
221	....	40,748	40,748	26
209	....	37,268	37,268	26
CULEBRA DISTRICT.				
206	....	54,556	54,556	24½
208	29,345	19,563	19,563	26
205	....	41,714	41,714	23
PEDRO MIGUEL.				
231	4,000	24,613	28,613	21

BEST RECORDS FOR ONE DAY.

Shovel.	Location.	Date.	Character of material excavated.	Cubic yards.
218	Empire	May 8	Rock and earth	2,945
253	Empire	May 23	Earth	2,755
222	Empire	May 25	Earth	2,620
253	Empire	May 2	Earth	2,610
206	Culebra	May 16	Rock and earth	2,831
205	Culebra	May 4	Rock and earth	2,793
206	Culebra	May 23	Rock and earth	2,755
231	Pedro Miguel	May 6	Rock	2,660
231	Pedro Miguel	May 10	Rock	2,166
231	Pedro Miguel	May 9	Rock	2,109
231	Pedro Miguel	May 8	Rock	1,900

Accident in Cristobal Railroad Yard.

Passenger train No 3 on the Panama railroad, due to leave Colon at 5:25 daily, was struck by a line of moving freight cars while passing through Cristobal yards on Friday, June 9, resulting in injuries to four or five people and damage to four of the coaches. The accident occurred a short distance from the coal chute, at a point where there is a crossover from the yard tracks to the main line. As the passenger train neared this place, a switching engine, pushing a number of freight cars, began to move over one of the yard tracks in the opposite direction. A misplaced switch caused the train to take the crossover instead of continuing on its proper track, and, as a result, the end freight car struck the side of the third first-class coach obliquely, sheared along its entire length, collided with the end of the next car, the baggage coach, more nearly end on, overturning it, and, before coming to a stop, raked the side of one of the second-class coaches. The passenger cars involved in the accident contained comparatively few people. Among the injured were H. P. Warren, assistant construction engineer of the Panama railroad, who had a leg crushed and broken, and M. B. Connolly, superintendent of construction on the Panama railroad relocation, who was severely stunned and bruised. The baggageman was buried under a pile of trunks, which became lodged in such a manner as to protect him from serious injury.

In the collecting of old French machinery for sale in the States as scrap, care will be taken to preserve a number of typical machines and pieces of equipment, in order that they may be available for exhibition at the Panama-Pacific Exposition in San Francisco in 1915.

Improvements at Cold Storage Plant.

The increased space for cold storage of meat at the plant in Cristobal has made it possible to store 800 quarters of beef more than heretofore, bringing the capacity up to 2,400 quarters. Tanks for corning 2,000 pounds of beef a day have been installed. Kettles for the boiling of hams and making of soup stock have been ordered, and when they are installed, soup stock will be added to the list of cold storage supplies. A power meat chopper has also been installed, and Hamburg steak, and possibly some sausage will be made. These improvements will allow beef to be bought by the whole carcass, and in this way, the best beef will be obtained at the lowest possible price.

LABOR FORCE AND QUARTERS IN MAY.

There has been a lack of common laborers available for the Canal and railroad work for the past month, and recruiting in the West Indies will probably be necessary to increase the supply.

The total of the Canal and Panama railroad force at work on May 31 was 34,233, as compared with 35,259 in April, 1911, and with 36,796 in May, 1910. Of the total in May, 1911, Canal employes numbered 27,229, and Panama railroad, 7,004. The force report follows:

Department.	Silver Employes.*														Total Gold.	Grand Total.
	Artisans.						European Laborers.		West Indian Laborers.							
	Monthly.	44 cents.	32 cents.	25 cents.	20 cents.	16 cents.	20 cents.	16 cents.	20 cents.	16 cents.	13 cents.	10 cents.	7 cents.	Total Silver.		
Const'ct'n and Eng'r'ng.	4,356	14	17	227	642	2,412	2,688	997	110	510	3,799	2,576	252	18,600	3,280	21,880
Civil Administration	193	..	..	2	4	17	......	......	...	.....	......	6	....	222	354	576
Sanitation	682	..	..	2	4	4	......	......	...	.....	5	309	9	1,015	364	1,379
Quartermaster's	946	..	1	113	150	109	245	29	18	.....	12	760	12	2,395	205	2,600
Subsistence	621	..	..	1	1	......	......	......	...	.....	......	......	....	623	51	674
Disbursements	7	..	..	....	.....	......	......	......	...	.....	......	......	....	7	24	31
Examinat'n of Accounts.	5	..	..	....	.....	......	......	......	...	.....	......	......	....	5	84	89
Total	6,810	14	18	345	801	2,542	2,933	1,026	128	510	3,816	3,651	273	22,867	4,362	27,229
Month previous	6,914	15	18	337	806	2,640	3,222	1,177	124	557	3,926	3,707	279	23,722	4,507	28,229
Changes	-104	-1		+8	-5	-98	-289	-151	+4	-47	-110	-56	-6	-855	-145	-1,000

Panama railroad force, 3,773; Panama railroad relocation force, 2,174; Panama railroad commissary force 1,057. Total, 7,004 I. C. C. force, 27,229. Grand total, 34,233.

*All wages specified are in gold.

The employes in the Department of Construction and Engineering on May 31 were distributed, as follows:

Division.	Silver Employes.*														Total Gold.	Grand Total.
	Artisans.						European Laborers.		West Indian Laborers.							
	Monthly.	44 cents.	32 cents.	25 cents.	20 cents.	16 cents.	20 cents.	16 cents.	20 cents.	16 cents.	13 cents.	10 cents.	7 cents.	Total Silver.		
Chief Engineer	42	..	..	2	1	.....	......	......	...	.....	175	......	....	220	173	393
Mechanical	197	6	2	24	50	429	63	8	...	.....	673	39	7	1,498	803	2,301
Atlantic	2,008	5	13	98	309	1,001	481	625	...	98	1,081	446	48	6,213	939	7,152
Central	1,057	3	.	25	106	438	1,789	86	89	412	858	1,864	130	6,857	780	7,637
Pacific	1,052	..	2	78	176	544	355	273	21	....	1,012	227	67	3,812	585	4,397
Total	4,356	14	17	227	642	2,412	2,688	997	110	510	3,799	2,576	252	18,600	3,280	21,880
Month previous	4,496	15	18	231	665	2,558	3,083	1,165	106	557	3,910	2,712	260	19,776	3,397	23,173

QUARTERS.

On May 31, there were 23,386 occupants of Commission quarters. Of this number, there were 9,336 white Americans, including 5,395 men, 2,043 women, and 1,898 children. There were 5,538 Europeans, of whom 4,944 were men, 253 were women, and 341 were children. There were 8,512 negroes, of whom 6,002 were men, 1,126 were women, and 1,384 were children. The above figures include 26 Asiatics at Balboa, and two at Porto Bello.

A large number of married quarters have been vacated during the month, and a corresponding number of applications filled. The number on the No. 1 waiting list has dropped from 77 to 27, and the No. 2 list from 752 to 685.

Bachelor quarters at Gorgona, which were so congested a few months ago, show 110 vacancies, and arrangements are being made to use some of the houses as nonhousekeeping married quarters.

RECORD OF CANAL WORK SINCE AMERICAN OCCUPATION.

MONTHLY TOTALS BY CUBIC YARDS OF EXCAVATION AND LOCK AND DAM CONSTRUCTION.

[All figures are of work useful for the completed Canal.]

DRY EXCAVATION.

CENTRAL DIVISION.

M'THS.	Culebra Section.*								Chagres Section.**				
	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
Jan.	....	70,650	120,990	566,750	1,227,022	1.150.249	1,323,693	1,356,394	....	169,447	389,399	175.802	255,385
Feb.	....	75,200	168,410	639,112	1,248,265	1,194,454	1,259,173	1,409,338	....	200,145	450,182	286,309	219,550
March	....	132,840	239,178	815,270	1,290,885	1,434,597	1,509,728	1,728,748	....	324,233	619,491	484,846	297,339
April	....	126,749	213,177	879,527	1,242,574	1,272,746	1,288,845	1,414,336	....	329,483	510,020	428,777	102,103
May	27,556	75,935	196,209	690,365	960,840	1,126,963	1,099,279	1,299,100	....	235,902	386,170	248,974	29,783
June	32,551	76,905	212,623	624,586	1,134,032	1,242,134	1,305,141	....	....	322,145	275,900	164,389	....
July	31,599	78,570	159,789	770,570	1,121,325	1,200,828	1,153,810	....	....	345,757	233,897	166,106	....
August	35,056	49,210	244,823	786,866	1,171,927	1,173,370	1,377,714	....	2,900	368,683	231,543	234,404	....
Sept.	25,220	44,085	291,452	753,468	1,122,860	1,235,978	1,339,948	....	21,546	346,948	235,818	234,290	....
Oct.	19,695	52,940	327,009	834,499	1,160,101	1,302,901	1,320,314	....	25,627	424,911	221,409	271,409	....
Nov.	28,860	60,540	221,642	790,632	1,022,576	1,070,792	1,209,554	....	44,044	336,390	93,619	260,882	....
Dec.	42,935	70,630	307,689	1,025,485	1,210,046	1,152,022	1,211,400	....	98,652	383,948	105,044	197,481	....
Totals.	243,472	914,254	2,702,991	9,177,130	13,912,453	14,557,034	15,398,599	7,207,916	192,769	3,787,992	3,752,492	3,153,669	904,160

ATLANTIC DIVISION.

MONTHS.	Colon (Mindi)†		Gatun Locks, Dam and Spillway.††			
	1909.	1911.	1908.	1909.	1910.	1911.
January	45,664	....	292,155	102,690	125,011	65,889
February	46,046	47,102	282,797	95,031	123,738	50,511
March	70,713	49,734	374,598	90,051	132,007	51,431
April	74,368	74,030	373,456	70,009	103,243	12,548
May	71,407	64,482	266,747	52,786	82,958	17,677
June	80,101	....	244,951	36,556	88,088	....
July	82,378	....	213,359	39,058	95,503	....
August	66,249	....	188,262	40,346	99,737	....
Sept'mber	61,437	....	145,990	49,945	103,040	....
October	72,643	....	154,064	57,321	118,327	....
November	42,009	....	118,278	63,452	94,552	....
December	....	....	119,904	96,590	72,030	....
Totals	713,015	235,348	2,774,561	793,835	1,238,234	198,056

PACIFIC DIVISION.¶

MONTHS.	Pedro Miguel Locks.‡				Miraflores Locks, Dams and Spillway.‡‡			
	1908.	1909.	1910.	1911.	1908.	1909.	1910.	1911.
January	....	83,726	27,320	15,690	7,203	61,202	31,479	48,744
February	....	58,242	9,486	6,809	39,046	53,689	15,300	12,936
March	....	95,624	6,784	674	73,194	51,417	18,184	72,739
April	....	101,365	9,129	255	98,943	60,060	12,148	79,751
May	....	57,523	10,405	5,905	73,023	47,588	20,250	57,975
June	13,228	70,971	8,420	....	68,691	55,653	21,994	....
July	22,648	77,503	4,410	....	104,369	50,999	11,990	....
August	22,217	58,025	12,789	....	94,248	35,446	17,548	....
Sept'mber	28,833	48,825	10,405	....	90,923	31,803	8,590	....
October	48,875	39,002	7,433	....	74,700	25,349	9,850	....
November	55,401	20,207	10,636	....	52,930	18,644	9,400	....
December	65,578	28,342	11,195	....	69,650	20,083	17,906	....
Totals	256,780	739,355	128,412	29,333	846,920	511,933	194,639	272,145

*Total to June 1, 1911, 64,113,849 cubic yards.

**Total to June 1, 1911, 11,791,082 cubic yards, of which 110,491 cubic yards were removed by sluicing.

†Total to June 1, 1911, 1,712,169 cubic yards; in this total are included 172,851 cubic yards removed in 1907, and 590,955 cubic yards removed in 1908.

††Total to June 1, 1911, 6,371,493 cubic yards; in this total are included 26,628 cubic yards excavated October to December, 1906, and 1,340,179 cubic yards in 1907.

‡Total to June 1, 1911, 1,153,880 cubic yards.

‡‡Total to June 1, 1911, 1,825,637 cubic yards.

¶There were also 78,233 cubic yards excavated at Balboa locks and dams in 1907. There were removed 362,305 cubic yards at different points in prism to June 1, 1911. There were also 172 cubic yards removed by steam shovels outside of prism during October, 1908.

WET EXCAVATION.

ATLANTIC DIVISION.

MONTHS.	Atlantic Entrance.§					Gatun Locks †	
	1907.	1908.	1909.	1910.	1911.	1908.	1909.
Jan.	111,100	490,701	521,050	510,055	520,181	......	97,043
Feb.	110,002	427,722	444,910	493,448	455,318	......	132,291
Mar.	84,145	546,886	461,208	412,325	391,736	......	141,838
April	69,889	496,366	470,635	190,574	492,579	......	17,938
May	133,847	564,386	315,370	447,578	514,178	......	52,011
June	124,118	572,749	182,575	458,021	....	......	38,829
July	109,922	625,497	348,451	423,092	....	......	....
Aug.	194,297	638,217	422,846	508,829	....	..	....
Sept.	403,842	624,776	410,574	451,873	....	......	....
Oct.	415,120	505,260	314,778	549,788	....	......	....
Nov.	422,797	570,832	457,889	600,708	....	......	....
Dec.	442,835	679,604	489,121	482,370	....	8,583	....
Tot'ls	2,621,914	6,742,996	4,839,407	5,528,661	2,373,992	8,583	479,950

PACIFIC DIVISION.

MONTHS.	Pacific Entrance.§§							Miraflores Locks.§§§	
	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1910.	1911.
Jan.	......	95,940	94,710	460,250	469,529	518,936	379,810	......	89,243
Feb.	......	95,940	93,480	663,519	671,477	285,791	386,866	......	87,335
Mar.	......	116,820	92,319	783,281	865,696	462,588	639,761	......	......
April	......	110,700	104,855	676,539	731,767	534,322	439,622	......	......
May	......	112,340	122,157	530,466	720,753	484,509	548,047	......	......
June	50,676	62,697	133,575	656,621	844,685	475,486	....	......	......
July	41,533	98,400	108,338	696,170	733,181	515,782	....	......	......
Aug.	54,530	111,930	168,284	737,774	623,263	506,969	....	......	......
Sept.	114,308	105,780	153,975	750,080	662,976	473,585	....	......	......
Oct.	81,836	97,170	357,122	762,276	720,920	467,873	....	40,000	......
Nov.	71,176	92,988	365,423	609,089	627,791	425,370	....	47,444	......
Dec.	71,094	90,528	349,551	729,960	727,460	387,034	....	68,681	......
Tot'ls	485,153	1,191,233	2,143,789	8,056,025	8,399,498	5,538,745	2,394,106	156,125	176,578

§Total to June 1, 1911, 23,534,435 cu yds.; in this total are included 399,820 cubic yards excavated in 1905, and 1,027,645 cubic yards in 1906.

§§Total to June 1, 1911, 28,208,549 cubic yards. Of this amount, 143,819 yards were removed by monitors.

§§§Total to June 1, 1911, 642,350 cubic yards; in this total are included 309,647 cubic yards excavated in 1909.

†Total to June 1, 1911, 488,533 cubic yards. There were also 38,425 cubic yards removed by dredges at Gatun Dam site in 1907.

CONCRETE IN LOCKS AND DAMS.

MONTHS.	Gatun Locks.			Pedro Miguel Locks.			Miraflores Locks.		
	1909.	1910.	1911.	1909.	1910.	1911.	1909.	1910.	1911.
Jan	......	54,136	72,919	......	16,273	38,513	......	......	24,018
Feb.	......	55,696	72,103	......	13,218	37,011	......	146	20,896
March	......	60,998	86,884	......	18,793	44,716	......	314	31,173
April	......	63,227	67,361	......	24,522	28,635	......	13	38,758
May	......	74,273	67,844	......	29,576	19,135	......	27	36,154
June	......	89,401	......	......	30,631	......	......	1,603	......
July	......	84,001	......	......	41,464	......	28	3,672	......
Aug.	1,298	85,686	......	......	51,264	......	74	6,030	......
Sept.	12,294	76,720	......	2,370	50,702	......	......	18,133	......
Oct.	29,378	86,949	......	8,310	61,422	......	......	22,159	......
Nov.	30,270	75,152	......	10,169	64,248	......	......	23,871	......
Dec.	42,832	80,212	......	13,007	42,834	......	......	21,533	......
Total	116,072	886,451	367,111	33,856	444,947	168,010	102	97,501	150,999

From March 17, 1909, to June 1, 1911, there were placed in the Spillway of Gatun Dam 139,517 cubic yards of concrete, including 3,656 cubic yards placed in May, 1911; in Miraflores Dam, there were placed 321 cubic yards up to June 1, 1911.

FILL PLACED IN DAMS.

M'THS.	Gatun.*				Pedro Miguel.†		Miraflores ‡			
	1910.		1911.		1910.	1911.	1910.		1911.	
	Wet.	Dry.	Wet.	Dry.	Dry.	Dry.	Wet.	Dry.	Wet.	Dry.
Jan.	178,254	236,994	211,992	218,690	......	......	......	28,151	89,243	24,685
Feb.	292,215	271,788	301,733	211,008	11,510	......	......	1,438	87,335	32,404
Mar.	210,387	332,661	342,800	255,047	22,860	......	......	5,385	25,131	23,940
April	242,440	263,437	368,658	205,130	31,394	......	......	......	14,100	67,260
May	249,283	194,868	419,348	207,751	23,572	......	......	6,480	18,353	30,032
June	384,166	258,653	......	......	1,350	......	......	7,356	......	......
July	462,092	180,111	......	......	......	......	......	4,290	......	......
Aug.	406,606	229,774	......	......	......	......	......	10,898	......	......
Sept.	457,637	223,102	......	......	......	......	......	11,220	......	......
Oct.	480,732	259,619	......	......	......	......	40,000	14,370	......	......
Nov.	129,666	266,105	......	......	......	......	47,444	8,960	......	......
Dec.	243,121	169,575	......	......	......	......	68,681	39,224	......	......
T'tal	3,736,599	2,886,687	1,644,531	1,097,626	90,686	......	156,125	137,772	234,162	178,321

*Dry fill begun in January, 1907, and 2,096,477 cubic yards of wet, and 3,241,418 cubic yards of dry fill were placed in 1907, 1908 and 1909.

†170,166 cubic yards placed in dams up to December, 1909, inclusive.

‡138,587 cubic yards of wet fill and 472,091 cubic yards of dry fill were placed in dams up to December, 1909.

CANAL EXCAVATION TO DATE.

By French Companies		78,146,960
French excavation useful to present Canal		29,908,000
By Americans—		
Dry excavation	87,298,329	
Dredges	53,022,783	
Total		140,321,112
May 4 to December 31, 1904	243,472	
January 1 to December 31, 1905	1,799,227	
January 1 to December 31, 1906	4,948,497	
January 1 to December 31, 1907	15,765,290	
January 1 to December 31, 1908	37,116,735	
January 1 to December 31, 1909	35,096,166	
January 1 to December 31, 1910	31,437,677	
January 1 to May 31, 1911	13,914,048	

Totals by Divisions and Amount to be Excavated.

DIVISIONS.	Amount excavated.		Remaining to be Excavated.	
Atlantic—				
Dry excavation	8,083,662	32,145,055	189,392	11,212,290
Dredges	24,061,393		11,022,898	
Central—				
Culebra Cut	64,113,849	75,904,931	20,072,875	21,220,087
All other points	11,791,082		1,147,212	
Pacific—				
Dry excavation	3,420,227	32,271,126	2,959,915	9,784,277
Dredges	28,850,899		6,824,362	
Grand totals		140,321,112		42,216,654

WORK IN GORGONA SHOPS.

Sand Blast Cleaning and Pneumatic Painting of Cars—Foundry and Car Shop Work.

After a test of one month, the sand blast method of cleaning steel cars, and the pneumatic painters in use at Gorgona shops have demonstrated the economy of this method over the one formerly employed, viz., removing the scale by hammering the cars and painting them by brush. The steel dump cars in use on the Pacific and Atlantic Division work are subjected to excessive oxidization from the salt air and, on all the work, the cars are continually subject to rust, consequent upon hauling wet material and being subjected to the continuous rainy weather.

The sand blast machine installed at the shops about a month ago consists of a reservoir in which dried sand is placed, and three leads to which hose may be attached. An air pressure of 50 pounds forces the sand from the reservoir into the leads, where a pressure of 80 pounds is applied to drive it forcibly against the cars. Only two leads are commonly used, and the sand is projected through a ¼-inch nozzle. At present, Chamé sand is used, but this is so fine that it is not thoroughly effective, and an order has been placed for some coarser quartz sand, which occurs in small deposits at Chorrera. Six cars can be cleaned of scale in one day. The cars are run on a switch alongside the sand blast plant, and, after cleaning, are pushed forward a few feet to the place where the pneumatic painting is done. Coal tar paint is used, and it is ordinarily applied through two nozzles, thus making it possible to work on two cars at one time. Twelve cars may be painted by this method in an 8-hour day.

One of the items of work in the car shop that is little appreciated is the placing of 680 new car wheels a month on the cars. These wheels are brought from the States and are bored and mounted at the shops. An average month's work includes 300 new wheels on 20-yard flat cars, 200 on steel dump cars, and about 180 on other equipment. When cars come into the shops for repairs, the wheels are tested, and if they are flat beyond 2½ inches from normal, have a chipped or worn flange, or are worn through the chill, they are replaced with new wheels. Some old wheels are utilized by placing them on an axle on which is another old wheel, not sufficiently worn to be taken from service. From two to three tons of the old wheels are used each month in the cupola, being melted over into castings that do not require machining, such as counterweights for the spillway gates, and the balance are sent to the States as scrap.

From 420 to 450 wood cars of all classes are repaired each month, an average being about 150 twenty-yard flat cars rebuilt, 230 given light repairs, and from 10 to 20 cars of various kinds repaired or rebuilt. As high as 500 steel dump cars are repaired each month, the majority of these being for use of the Central Division. The cars that need it badly, and such others as can be expeditiously handled, are scaled and painted. Others are merely painted after the repairs are made, the object being, at all times to keep the cars in the shop as short a time as possible.

Last week, the foundry completed an order for 955,000 pounds of caisson seats for the locks at Gatun, Pedro Miguel, and Miraflores. These castings are made of gray iron; are "L" shape with stiffening webs, and will be placed on the ends of the walls and on the caisson sill at the upper and lower ends of all the locks, occupying a position on the wall and sill such as the jam and sill of a door. Upon them the caissons will rest when it is necessary to unwater the locks for examination or repair. They will be situated in front of the movable dams, and their use will also permit examination of the sill of the dam. There are 300 of these castings, 100 for Gatun, 104 for Miraflores, and 96 for Pedro Miguel.

The foundry is now at work on an order of 345 tons of gray iron castings to be used as plates to face the baffle piers in Gatun spillway. There will be 73 of these plates, 31 of them 10x6x1 foot, and 42, 10x4x1 foot. The planer in the shops is too small to take the larger plates, and in machining the joints it will be necessary, therefore, to fix the plates on the floor of the shop, fix the tool on the bed of the planer, and machine them in this manner. An order for 3,888 stationary, and 4,888 movable, buffers for use in the guide walls of the locks has been placed by the Pacific Division. The stationary parts will be fixed in the wall, and the movable parts will form a cap to fit upon the fixed portions, a spring between the two absorbing the force of any blow that may be dealt by a ship bumping against the walls.

A night force of 200 men, 50 of whom are on the gold roll, is kept at work in the foundry, boiler, machine, and wood shops, on account of the emergency repairs and manufacturing that the shops are continually called upon to do. Maintaining this night force accelerates delivery of rush orders, and at the same time, avoids payment for overtime, which would be necessary if men from the day force were detailed to night work.

Gatun Cableway Withdrawn from Service.

Concrete laying at Gatun Locks is now being carried on with only three of the four duplex cableways. One of the cableways was moved to the upper lock on May 17, where it is engaged in handling fixed steel, and earth, for backfilling in the center wall. It will not be returned to the concrete work, which is going forward rapidly in the middle and lower locks.

Reorganization in Atlantic Division.

The work now included in the Cristobal residency of the Atlantic Division, namely, dredging in the Atlantic entrance, steam shovel excavation at Mindi, direction of Cristobal marine shops, construction of Colon breakwater, and the conduct of the quarry and crusher at Porto Bello, and the sand excavation at Nombre de Dios, will be placed in charge of Major Chester Harding, Assistant Division Engineer of the Atlantic Division, upon the departure of Major Edgar Jadwin, the present resident engineer, for Washington. No assistant engineer will be assigned to the work at Porto Bello to succeed Captain Horton W. Stickle.

Sailing of the "Ancon."

The sailing of the steamship *Ancon* from pier No. 11, Cristobal, scheduled for Tuesday, June 13, has been postponed until 3 p. m., Saturday, June 17.

Gatun Dam Spillway.

The concrete work in the spillway of Gatun Dam is over 62 per cent completed, 139,645 cubic yards, out of a total of 225,000, having been placed at the close of work on June 10. A statement of the amount laid each working day last week, and of the total in place, follows:

Date.	Concrete Laid.	Hours worked.	No Mixers.
June 5	174	7:00	1
June 6	144	7:00	1
June 7	280	8:00	2
June 8	232	7:00	1
June 9	240	8:00	2
June 10	204	8:30	1
Total	1,274	45:30	1.33
Previously reported	138,371	....	....
Grand total	139,645		

I. B. of S. S. and D. M.

The I. B. of S. S. and D. M. will hold its regular meeting on Sunday, June 18, at the lodge hall in Empire at 12.15 p. m. All members interested in the welfare of the brotherhood are requested to attend this meeting.

ORDINANCE

Establishing Rules, Regulations, and Instructions for the Government of the Division of Fire Protection of the Canal Zone.

Be it ordained by the Isthmian Canal Commission that the rules and regulations and instructions for the Division of Fire Protection of the Canal Zone, approved by the Chairman and Chief Engineer on February 14, 1911, and effective April 1, 1911, are hereby established for the Canal Zone

This Ordinance shall take effect from and after the date of its approval by the Secretary of War. Geo W Goethals, *Chairman.*

—

Enacted by the Isthmian Canal Commission, April 29, 1911.

Approved by the Secretary of War, May 19, 1911.

CLASSIFIED EXPENDITURES.

A statement of classified expenditures of the Isthmian Canal Commission to April 30, 1911, follows:

Period.	Department of Civil Administration.	Department of Sanitation.	Department of Construction and Engineering.	General Items.	Total.
Total to June 30, 1909	$3,427,090.29	$9,673,539.28	$69,622,561.42	$78,022,606.10	$160,745,797.09
Total fiscal year 1910	709,351.37	1,803,040.95	26,300,167.05	2,863,088.83	31,675,648.20
July, 1910	58,474.88	156,006.64	2,216,849.78	280,015.85	2,711,347.15
August, 1910	63,887.05	164,220.65	2,348,777.07	336,961.35	2,913,846.12
September, 1910	60,586.46	153,433.27	2,516,814.41	236,170.76	2,967,004.90
October, 1910	37,250.26	146,587.47	2,565,042.28	295,537.33	3,044,417.34
November, 1910	71,981.80	137,912.89	2,356,292.01	233,587.25	2,799,773.95
December, 1910	69,424.73	144,754.71	2,480,221.44	179,047.95	2,873,448.83
January, 1911	71,426 87	137,665.14	2,202,370.20	235,678 30	2,647,140.51
February, 1911	69,886.61	127,198.56	2,172,805.21	173,109.54	2,542,999.92
March, 1911	74,670.20	130,694.38	2,641,274.42	460,607.91	3,307,246.91
April, 1911	74,198,25	126,588.34	2,129,806.54	115,705.55	2,446,298.68
Total	$4,788,228.77	$12,901,642.28	$119,552,981.83	$83,432,116.72	$220,674,969.60

SOCIAL LIFE OF THE ZONE.

Women's Organizations.

At the meeting of the ladies' auxiliary of the Empire Christian League, held on Friday, June 2, the study program was supplemented by a series of tableaus in which four little girls represented American missionaries in China and the far east. The auxiliary held a "market sale" of home baked goods—pies, cakes, and candies, at the Commission clubhouse on Saturday afternoon, June 10, the proceeds from which will be devoted to mission work on the Isthmus.

The Empire Women's Club held a "Current events" day on Thursday, June 1. The social meeting of the club will be held at the home of Mrs. Lingo, house No. 26, Las Cascadas, on Thursday, June 16.

A meeting of those who signed the petition for a chapter of the Order of the Eastern Star in the Canal Zone will be held at the lodge hall, Gorgona, on Sunday, June 18, at 2:30 p. m. The petition was signed by 96 persons.

At the meeting of the auxiliary order of the Daughters of Rebekah, held at Gorgona on Friday, June 9, nominations were made for the officers for the term of six months, beginning July 14. Mrs. Charles Beetham, the present vice-grand, will pass to the chair of noble grand at this time. The order has nearly one hundred members.

The ladies' auxiliary of the Gatun Christian League recently gave a bachelor supper in the chapel, from which the net receipts were $100. Sixty dollars of this money was given to complete the payment on the piano in the chapel, and the remainder will be devoted to painting and improvements in the interior of the chapel. The auxiliary was organized in April, its object being to assist the Gatun Christian League in its social work. The society is divided into three committees, as follows: Membership, for the purpose of keeping up the membership and arousing interest in the organization among the women of Gatun; social, to arrange for entertainments and to assist the league whenever called upon; deaconess, which will visit the women of Gatun in their homes and in the hospitals, and have charge of the preparation for the communion service in the chapel on the first Sunday in each month. The officers are: President, Mrs. E. Bath; vice-president, Mrs. Ben Jenkins; secretary-treasurer, Mrs. W. N. Windes.

Gatun Sunshine Society.

At the annual meeting of the Gatun Sunshine Society, the following officers were chosen: President, Mrs. William L. Sibert; vice-president, Mrs, Charles Wood; secretary, Mrs. W. N. Windes; treasurer, Mrs. F. O. Whitlock. At the close of the business meeting tea was served. The society has forwarded $50 to the international headquarters in New York, which will be used in the purchase of a supply of linen for a bed in the Arthur Home at Summit, N. J.

Church Notes.

A class of American children, four boys and six girls, made their first communion at St. Ferdinand's Roman Catholic Church, Empire, on Sunday morning, June 2. After the benediction, photographs of the class were taken, following which, the children adjourned to the parish house, where they were joined by the boys and girls of the choir, and breakfast was served. This is the first class of white children to be prepared for this service on the Isthmus. The Sunday school of St. Ferdinand's church held an outing on Sunday, June 11, going to Camacho dam, accompanied by their rector and several adults. There are 22 pupils in the school.

The Young Men's Christian Association, in connection with the United Methodist Church, will give its first public entertainment at the mission room in San Miguel, Panama, on June 25, at 7 p. m., on behalf of the new church. Subject, "The Bible, its preservation and moral effects."

Vacation School in Gatun.

A vacation school will be opened in Gatun early in July, in the public school building. There will be classes in basketry, drawing, water color, sewing, and a kindergarten class. A department for boys' manual training will be opened, if a sufficient number are enrolled. The school is independent of the Canal Zone public school. Twenty pupils have been enrolled.

Red Cross Finances.

The financial statement of the Canal Zone Chapter, American National Red Cross, for the month of May, follows:

RECEIPTS.

May 1, On hand	$8,153.15	
May 15, Proceeds of cricket match at Ancon	52.50	
May 18, Donated by Dr. Pablo Arosemena, President of the Republic of Panama, to the endowment fund	12.50	
May 31, Interest credited by bank, March 21 to May 31	26.72	
May 31, Receipts from membership dues during month	14.00	
Total receipts		$8,258.87

DISBURSEMENTS.

May 6, Deportation of widow and child, Empire	$ 50.00	
May 6, Relief of destitute American, Ancon	5.00	
May 16, Draft to treasurer, American National Red Cross to cover one-half annual dues received during quarter, Feb. 1 to April 30, inclusive	440.50	
May 19, Paid to Mr. T. L. Clear, treasurer, endowment fund committee, balance of fund on hand	476.98	
May 31, Expenditures on account of Colon fire, as per vouchers attached	4,622.53	
Total expenditures		$5,595.01
May 31, Balance on hand		$2,663.86
On hand in general fund		$2,440.40
On hand in Colon fire fund		223.46
Total		$2,663.86

JOHN L. PHILLIPS, *Treasurer.*

Lawn Tennis Championship.

The Isthmian Tennis Association completed its tournaments for the season of 1911 in a doubles tournament at Empire on June 4. The winners for the season are, as follows:

SINGLES.

Tournament.	First.	Second.
Jan. 8, Panama	Runyan	Chase Pulsifer.
March 5, Empire	Ross	G. T. Stokes.
May 7, Colon-Cristobal	Bartholomew.	McMurdo.

DOUBLES.

Tournament.	First.	Second.
Feb. 5, Colon-Cristobal	Farquharson. R. W. Hart.	Pulsifer. G. T. Stokes.
May 30, Tivoli	Runyan Ross	Coffin. Guptil.
June 4, Empire	Hunter F.E. Pearman.	Runyan. Troy Earhart.
Maduro-Lupi cup, April 2, at Panama	Herrick. Runyan.	

Fourth of July Celebration.

The committee in charge of the athletic games at the Fourth of July celebration in Cristobal has decided to hold the games on Roosevelt avenue, and has prepared a program of fourteen standard field contests, and eight special contests, entries in the regular contests not being eligible to compete in the special. Application for entry may be made at the office in any Commission clubhouse, or to H. H. Hammer, Corozal. The events are, as follows:

Standard—120-yard low hurdle; discus throw; 100-yard run for boys; pole vault; 100-yard run; running high jump; 220-yard run; shot put; running broad jump; 440-yard run; one mile run; 4-boy relay, 880 yards; 880-yard run; 4-man relay, 4 laps.

Special—Sack race; potato race; fat man's race; ladies' egg race; equipment race; pipe race; wall scaling contest; three-legged race.

PERSONAL.

Mr. H. F. Tucker has resigned his position as designing engineer in the office of the assistant engineer, and will engage in business in Boston as consulting engineer. Accompanied by Mrs. Tucker, he sailed for the States on the *Cristobal* on June 7.

Married.

CONGER-SCHUBER—At the church of the Sacred Heart, Ancon, Dolores Josephine, daughter of Mr. and Mrs. Edward Buchanan Schuber, to Lieutenant Edward Haggard Conger, U. S. Marine Corps, Saturday evening at 8.30, the Reverend Father Quijano officiating. Canal Zone residence, Camp Elliott, Bas Obispo.

REIDY-SULLIVAN—On June 1, 1911, in New York City, Helena G. Sullivan of Newport, Rhode Island, to John J. Reidy of Boston, Mass. Canal Zone residence, Cristobal.

CLAUSE-HABERKOST—At Cristobal, C. Z., Sunday evening, June 4, Eleanor Caroline Haberkost to Frederick W. Clause, both of Akron, Ohio; the Rev. Carl H. Elliott officiating. Canal Zone residence, Cristobal.

BROWN-MEAHR—At Cristobal, on June 8, Mabel Sophia Meahr of Northville, N. Y., to Frank N. Brown of Amsterdam, N. Y.; the Rev. C. O. Purdy officiating. Canal Zone residence, Tabernilla.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Culebra, C. Z., on Sunday, June 18, 1911, at 5:45 p. m. The program follows:

1 March—*The Hustler*........................Alford
2 Selection—*The Prince of Pilsen*............Luders
3 *a* Intermezzo—*Garden of Roses*..............Pratt
  b Wooden Shoe Dance—*Dutch Kiddies*....Trinkaus
4 Serenade—*Andalusian*.......................Bonnet
5 Overture—*Norma*...........................Bellini
6 Waltz—*An Autumn Reverie*....................Rolfe
7 Selection—*Robin Hood*....................DeKoven
8 Valse Tres Lente—*Amoureuse*..............Berger
9 March—*New Colonial*..........................Hall

CHAS. E. JENNINGS, *Musical Director.*

The next concert will be given at Las Cascadas on Sunday, June 25, at 6 p. m.

Misdirected Letters.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received in the office of the Director of Posts, and may be secured upon request of the addressee:

Bean, Ernest
Beatz, J. W.
Borden, Mrs. C. A.
Briggs, J. H.
Burkhardt, Henry
Campbell, Isaac
Costin, H. S. (2)
DeWitt, Mortimer
Drayton, Allan C.
Englesberg, David
Foutenelle, P. V.
Gallagher, Chas.
Gandia, Manuel
Golden, Joe
Griffin, J. J.
Grobe, G. E.
Holt, Glenn P.
House, E. C.
Hughston, William
Jackson, Walter
Jacob, Allan
Johnston, Wm. Caley
Jones, F. R.
Knapp, Guthrie
Lewis, Sra. G. M. de
Marene, Thomas
Martin, Mrs. Hannah
McDonald, R. M. (pkg.)
Mellon, Robert
Murray, Samuel
Murray, Homer
Oliver, E. A.
Parker, Emery
Pierce, Tamor R.
Ramsbolton, E. C. (pam.)
Rowley, Wm.
Russell, Miss Dorothy
Russell, John
Smith, George H. Fallow
Smith, R. E.
Starnes, W. S.
Stewart, S. H.
Sullivan, Jas. A.
Taylor, C. Joel
Taylor, William A.
Teiner, Richard
Turner, W. A.
Uljer, Peter W.
Vandame, Mrs. W. F.
Vazquez, G. Manuel
Ward, Dr. J. D.
Webb, W. Wilkes
Weir, Mrs. J. E.
Williams, Henry
Williams, William F.
Wilson, W.
Wilson, S. B. (pkg.)
Wilson, John H. (2d class)

COMMISSION CLUBHOUSES

Activities of the Young Men's Christian Association.

CULEBRA.

High scores in duckpins for the week: Case, 106, 103, 111; Cornthwaite, 110, 101; Brown, 101, 100; Mengel, 101, 103; Driscoll, 100.

A match game in duckpins was held on Saturday morning between the boys of Empire and Culebra, the home team winning the three games.

A track team has been organized with E. W. Tupper as captain, to compete in the Fourth of July events at Cristobal. There is need of more men to complete the team. The team will practice on Tuesday and Friday nights.

EMPIRE.

The following high scores were bowled in duckpins last week: Pinney, 106, 101, 102; Gustavson, 106, 107, 94; Akers, 110; Reed, 105; Goolsby, 103, 103; Rodeghiero, 97, 102.

The Culebra indoor baseball team defeated the Empire team on Saturday, June 10, by the score of 19 to 3. The battery for Empire was Young and Mullane, and for Culebra, Cushing and Tupper.

Application blanks for the Fourth of July athletic meet at Cristobal may be secured at the office. Empire men are urged to enter.

The May pool tournament was won by E. E. Barnes. There were 22 entries.

The gymnasium will be used for handball every Wednesday evening, and, as soon as a number of men are interested, there will be a tournament.

The high school students will present their entertainment, consisting of a musical program and a two-act comedy, on the evening of June 16.

GORGONA.

The wrestling matches Wednesday evening were witnessed by a small, but interested, audience. Ridge secured one fall from Cole in two 5-minute bouts, which were fast and hard contested. Simka secured two falls from Aitkens in three and five minutes, respectively. No matches have been arranged for next Wednesday, but the class will meet for the usual practice. All men interested are invited to attend. The class meets in the gymnasium at 7.30 every Wednesday evening.

The Gorgona indoor baseball team won from Corozal on the local floor Saturday night, by a score of 25 to 5. Christianson, pitcher for Gorgona in the first six innings, struck out nine men, and Weiser, in the last three innings struck out six men. This completes Gorgona's ninth game of the series with a percentage of 100.

GATUN.

Over 100 people were present at the meeting of the Gatun Literary Society, held on Wednesday evening, June 7. R. E. Chatfield presided and introduced Judge Wm. H. Jackson, who delivered a patriotic address. A violin solo was rendered by Miss Maria Elise Johnson, a piano solo by Miss Lucy Partello, and a bass solo by Mr. Case of Culebra. Refreshments were served.

At a meeting of the executive council on Friday night, June 9, the following officers were elected: Chairman, Col. Wm. L. Sibert; vice-chairman, R. M. Sands; recording secretary, W. N. Windes; chairman membership committee, Dan St. Clair; chairman educational committee and religious work, W. N. Windes; chairman gymnasium and games committee, Fred Huber; chairman library and reading room committee, W. C. Gayer; chairman house and decorating committee, R. M. Gamble; chairman social and entertainment committee, R. M. Sands. The council voted to hold its regular meeting on the last Friday night of each month.

The charges to members for hair cut and shave at the clubhouse have been reduced from 40 cents and 20 cents, to 35 cents and 15 cents, respectively.

Dr. M. E. Connor gave a talk on tuberculosis Sunday evening, June 11. A discussion followed the lecture.

A "smoker" will be held for the men of Gatun on Saturday night, June 17.

The "Smiths" defeated the "Bartes" in a match game of duckpins on Tuesday night, June 20.

CRISTOBAL.

In the local basketball league this week, Kavan's team was defeated by Luce's and Stearner's teams.

The subject of the debate at the meeting of the Cristobal literary society was, "Resolved, that women should have equal suffrage with men." E. B. Nelson and J. M. Weaver were on the affirmative side, and E. J. Dinnan and J. R. Stewart on the negative. The debate was decided in favor of the affirmative. The next meeting of the society has been postponed until Wednesday, the 21st on account of the I. C. C. band giving a concert on Wednesday night, the 14th. "What is socialism?" will be the subject of the next discussion of the society.

An entertainment was given by the Canal Zone high school students on Friday night. A cantata was rendered by forty voices and the following soloists: Soprano, Miss Hackenburg; tenor, Mr. Ross: baritone, Mr. Hull. The pupils also acted a farce entitled "Mr. Bob."

Dr. W. A. Blackburn has offered a prize to the bowler showing the greatest improvement in tenpins in the next 60 days.

The new alleys were thrown open to the public on Saturday night. In the tournament following the formal opening, the following scores were made:

TENPINS.

Gorgona—					
Roper	160	174	183	517	
Haldeman	189	169	147	505	—1022
Empire—					
Brown	141	198	134	473	
Parkis	151	187	191	529	—1002
Cristobal—					
Wheeler	135	130	164	429	
Bullard	196	170	165	531	— 960
Gatun—					
Barte	173	212	149	534	
Wilson	125	137	132	394	— 928
Culebra—					
Huttlemeier	151	141	145	437	
Herrington	130	149	162	441	— 878

DUCKPINS.

Culebra—					
Mengel	109	90	97	296	
Case	83	86	97	266	— 562
Gorgona—					
Dunlap	78	105	90	273	
Otis	89	93	88	270	— 543
Empire—					
Rodeghiero	108	91	86	285	
Gustavson	82	78	84	244	— 529
Cristobal—					
Barrett	82	90	81	253	
DeCora	84	87	88	259	— 512
Gatun—					
Dalton	78	83	98	259	
DeMoll	77	86	87	250	— 509

A members' "smoker" will be held Friday evening, June 16.

High scores in duckpins: Adams, 102; Barrett, 107, 102; Bullard, 110; DeCora, 101, 108; Orr, 102, 100, 100, 104; Smith, 111; Furlong, 100; Herring, 100; Wheeler, 115, 106, 109, 102; Hess, 111; Jacques, 120. Bigpins: Thomas, 213.

Rainfall from June 1 to 10, 1911, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	.84	6	1.03
Balboa	.74	6	.91
*Miraflores	.87	6	1.31
Pedro Miguel	.38	6	1.06
Rio Grande	.36	10	1.33
Central Section—			
Culebra	.25	2	1.13
*Camacho	.20	2	.80
Empire	.41	9	1.14
Gamboa	.83	9	2.03
*Juan Mina	1.05	9	3.74
Alhajuela	2.70	9	6.29
*El Vigia	3.58	9	6.26
*Gorgona	1.68	9	3.03
San Pablo	.58	9	1.30
Tabernilla	1.22	9	1.77
Bohio	.72	9	1.77
*Monte Lirio	1.79	2	4.38
Atlantic Section—			
Gatun	2.38	1	5.19
*Brazos Brook	1.93	1	5.32
Cristobal	1.48	1	4.51
Porto Bello	1.29	5	†3.13

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

†To 5 p. m., June 9.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, June 10, 1911. All heights are in feet above mean sea level.

DAY AND DATE	STATION.				
	Vigia.	Alhajuela	Gamboa	Bohio.	Gatun Lake.
Sun., June 4	127.4	93.6	46.3	15.3	15.2
Mon., June 5	126.5	93.0	46.1	15.4	15.2
Tues., June 6	127.6	93.8	46.9	15.4	15.2
Wed., June 7	127.1	93.6	46.9	15.2	15.2
Thurs., June 8	126.9	93.4	46.5	15.0	15.0
Friday, June 9	133.0	97.6	51.7	16.6	15.2
Sat., June 10	128.4	94.9	50.7	16.9	15.7
Height of low water	125.0	92.0	44.0		

OFFICIAL CIRCULARS.

Requests for Steamship Transportation.

CULEBRA, C. Z., June 7, 1911.

CIRCULAR No. 175-H:

Attention is called to the fact that requests for steamship transportation will not be issued by this office more than thirty days in advance of the date upon which it is desired to sail.

Requests for such transportation should not be submitted, therefore, more than two or three days in advance of the thirty-day time limit.

H. F. HODGES,
Acting Chairman and Chief Engineer.

Color of Hand and Push Cars.

CULEBRA, C. Z., June 7, 1911.

CIRCULAR No. 397:

Hereafter, the standard color for hand and push cars in the service of the several departments and divisions of the Isthmian Canal Commission and relocation will be box car red.

Yellow will be the standard color for all hand and push cars in the service of the Panama railroad, as heretofore directed.

As a distinguishing mark the several departments and divisions will use the distinctive diamond now used on rolling stock, with the initial showing division to which assigned. Cars in the service of the Quartermaster's Department will be marked with a diamond, the letters, "Q. M. D." appearing therein, while the Mechanical Division will use a diamond with the lettering "Mech. Div." appearing therein.

Cars painted other than directed by this circular to be changed to standard as soon as necessity for repainting the cars now in service becomes apparent.

H. F. HODGES,
Acting Chairman, Isthmian Canal Commission.
Second Vice-President, Panama Railroad Company.

Pay and Promotion of European Laborers

CULEBRA, C. Z., June 10, 1911.

Referring to the Chairman's circular letter of May 24, and to the various replies thereto, concerning the pay of European laborers:

It appears to be the consensus of opinion that the pay of noncontract laborers should be increased from 16 to 20 cents an hour at the expiration of six months' satisfactory service automatically, and without the formal recommendation of the foreman or superintendent. It is accordingly directed that all 16-cent European laborers, who have served continuously and satisfactorily for six months, or more, be immediately promoted, and that in future, and until further notice, all such laborers be promoted to 20 cents an hour as they complete six months' satisfactory service.

Respectfully,
H. F. HODGES, *Acting Chairman.*

Expenditures for Repairs to Equipment.

CULEBRA, C. Z., June 9, 1911.

CIRCULAR No. 370-B:

Effective at once, expenditures for repairs to equipment transferred from one department or division to another will be distributed in the following manner:

When equipment is transferred from one division to another, the division last using the equipment will pay for such repairs as are necessary to put the equipment in operating condition.

If further repairs or improvements are required by the division to which the equipment is transferred such expense will be borne by the latter division.

H. F. HODGES,
Acting Chairman and Chief Engineer.

Acting Local Auditor.

COLON, R. P., June 6, 1911.

ALL CONCERNED:

During the absence of Mr. R. W. Hart, Local Auditor, on leave, effective June 7, Mr. M. L. Duff will act as Local Auditor.

J. A. SMITH, *General Superintendent.*

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending June 21, 1911, (75th meridian time):

DATE.	Low.	High.	Low.	High.
	A. M.	A. M.	P. M.	P. M.
June 15	......	5.57	12.13	6.03
June 16	12.29	6.32	12.51	6.40
June 17	1.07	7.12	1.34	7.20
June 18	1.47	7.53	2.20	8.08
June 19	2.34	8.40	3.10	8.58
June 20	3.24	9.32	4.03	9.57
June 21	4.23	10.27	5.02	11.00

FOUND—An umbrella. Owner can have same by calling at Ancon pay office.

COMMISSARY DEPARTMENT.

The hours during which the commissaries are open are, as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning June 10.

FRESH MEATS.	*Price.*
Mutton—Stewing per pound	6
Shoulder, neck trimmed off, (4 pounds and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing, per pound	10
Shoulder, for roasting (not under 4 pounds), per pound	12½
Chops, shoulder, per pound	16
Chops, per pound	24
Loin, for roasting, per pound	24
Cutlets, per pound	28
Pork—Loin chops or roast, per pound	14
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	8
Corned, No. 1, per pound	12
Corned, No, 2, per pound	10
Chuck roast (3 pounds and over), per pound	12
Pot roast, per pound	12½
Rib roast, second cut (not under 3½ pounds), per pound	16
Rib roast, first cut (not under 3 pounds), per pound	18
Sirloin roast, per pound	19
Rump roast, per pound	19
Porterhouse roast, per pound	20
Steak, chuck, per pound	12½
Round, per pound	13
Rib, per pound	18
Sirloin, per pound	19
Rump, per pound	19
Porterhouse (not less than 1½ pounds), per pound	20
Tenderloin (Western), per pound	24

MISCELLANEOUS.	
Caviare, Russian per tin	47, 89
Livers—Beef, per pound	7
Calf, each	60
Half, each	30
Sausage—Pork, per pound	17
Bologna, per pound	10
Frankfurter, per pound	12
Lieberwurst, per pound	10
Sweetbread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	†24
one-half dozen only	†13
Bluefish, fresh, per pound	14
Halibut, fresh, per pound	15
Shads, fresh, each	70
Shad roes, fresh, per pair	35

POULTRY AND GAME.	
Chickens—Fancy roasting, milk fed, large, each	1.25
Fancy roasting, milk fed, med., each	1.00
Fancy roasting, corn fed, about 4½ pounds, each	90
Fowls, each 60, 70, 80, 90.	1.00
Ducks, Western, about 4½ pounds, each	1.00
Long Island, each	1.30
Long Island, each	1.10
Broilers, milk fed, each	60
corn fed, each	55
Turkeys, per pound	26
Squabs, each	35
Capons	2.10
Partridges, each	50
Grouse, each	50

CURED AND PICKLED MEATS.	
Ham—German, Westphalia, per pound	36
Sugar cured, per pound	16
Sliced, per pound	18
Half, for boiling, per pound	17
Boiled, per pound	22
Hocks, per pound	‡8
Bacon—Breakfast, whole piece, per pound	22
Breakfast, sliced, per pound	23
Pork, salt family, per pound	14
Ox Tongues each	75
Pig's feet, per pound	9
Tongues, per pound	14
Sliced bacon in 1-pound tins, per tin	30
In 1-pound jars, per jar	30

DAIRY PRODUCTS.	*Price.*
Butter—Creamery special, per pound	30
Cheese—Roquefort, per pound	38
Philadelphia cream, cake	18
Young America, per pound	18
Swiss, per pound	26
Edam, each	1.00
Camembert, in small tins, tin	14
Neufchatel, cake	6
Gouda, per pound	34
Milk (Certified), per bottle	**25
Buttermilk, bottle	**15
Ice cream, quart	‡25
½-gallon	‡50

VEGETABLES AND FRUITS.	
Asparagus, per bunch	18
Beets, per pound	6
Carrots, per pound	†4
Cabbage, per pound	†3
Cucumbers, per pound	10
Egg plant, per pound	10
Lettuce, per pound	14
Onions, per pound	5
Potatoes, white, per pound	3
sweet, per pound	2
Parsnips per pound	†6
Peppers, green, per pound	10
Rhubarb per pound	5
Tomatoes, per pound	†8
Turnips, per pound	†5
Yams, per pound	3
Apples, fancy table, per pound	10
Lemons, dozen	24
Limes, per 100	80
Oranges, Jamaica, per dozen	12
Oranges, California, per dozen	36
Watermelons, each	40

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*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Liquor Licenses.

ANCON, C. Z., June 7, 1911.

By authority of the Acting Chairman of the Isthmian Canal Commission, the following applicants will be granted licenses for the retail sale of intoxicating liquors in the Canal Zone, for the year commencing July 1, 1911:

Rio Grande—
- Vicente Camañes, E.
- Kwong Hing Jan.
- Low Chong.
- Julio Victorero.
- Hop Lee Chong.
- Lee Hop.

Culebra—
- Pedro Colomar, R.
- Francisco Wong.
- Woo Chan.
- Ho Chong & Loon Chow.
- Chong Jan.
- Nemesio Victorero.
- William G. Bell.

Empire—
- Mezele Gustave.
- Manuel Leones.
- José Sandi.
- Lai Hing & Co.
- Juan Ansola Martinez.
- Chee Hing.
- Yuen Hing Chong.
- Chong Tai.
- Charles Bryant.
- Wing Wo.
- Wai Loy.
- Edward J. Kennedy.

Las Cascadas—
- Lai Wo
- Antonio Enseñat.
- Pedro Ross.
- Tomas Santi.

Matachin—
- Chee Chung Hing.
- See Lee.
- Kwong Sang.
- Agapito Centeno.

Gorgona—
- Esteban Duran.
- Jacob Kowalsky.
- Antonio Mas.
- Lin Tai Chong.
- George Andrade.
- Tracy Smail.

Gatun—
- Pedro Grau.
- Yee San Lung.
- Yee Kee.
- Dario Rodriguez.
- John B. Schuetz and Timothy J. Murphy.
- Julien Joly.
- Prudencio San Martin.
- Chow Bing.
- John R. Drummond.
- Vincente Wing.

TOM. M. COOKE, *Collector of Revenues.*

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal and Colon during the week ending June 10:

Oratava, June 4, from New York, with 400 pieces steel plate for stock.

Atenas, June 8, from New Orleans, with 15 barrels manganese steel link pins for Pacific Division; 110 sacks bran, 35 packages car parts, 2,400 sacks oats for stock.

Almirante, June 8, from New York, with 21 pieces castings for Atlantic Division; 12 tons lock construction material for Pacific Division; 250 kegs bolts, 7 cases filing boxes, 17 bundles brooms for stock.

Ancon, June 8, from New York, with 15,085 barrels cement, 5 pieces dredge parts for Atlantic Division; 15,085 barrels cement, 20 pieces cable chain, 13 cases motor and accessories, 8 cases pumping machinery for Pacific Division; 15 cases drugs and sundries for Sanitary Department; 11 crates filing cabinets for Chief Engineer; 20 cases metal polish, 1,500 cases refined petroleum, 12 cases copper tacks, 145 bundles steel bars, 426 pieces steel bars, 20 bundles steel angles, 50 kegs bolts for stock; and a miscellaneous cargo, the whole consisting of 122,996 packages, weighing 6,172 tons.

Commodore, June 10, from Liverpool, with 73 pieces lips for dredge buckets for Central Division; 3 reels wire rope for Pacific Division.

The following vessels arrived at or departed from the port of Balboa during the week ending June 10: June 5, *Ucayali*, from Callao, June 6, *Peru*, from Guayaquil; June 7, *Huasco*, from Valparaiso; *Ecuador*, from Guayaquil.

Departures—June 4, *Navajo*, to San Francisco; *Riverside*, to San Francisco; June 5, *Guatemala*, to Valparaiso; June 6, *Manavi*, to Buenaventura; June 8, tug *Hercules* and ship *Mango Reva*, to San Francisco; *Rupanco*, to Guayaquil in ballast.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Colon	P. R. R.	Monday	June 12
Allianca	P. R. R.	Saturday	June 17
Ancon	P. R. R.	Saturday	June 24
Advance	P. R. R.	Friday	June 30
Colon	P. R. R.	Friday	July 7
Allianca	P. R. R.	Thursday	July 13
Panama	P. R. R.	Wednesday	July 19
Advance	P. R. R.	Tuesday	July 25
Colon	P. R. R.	Monday	July 31
Allianca	P. R. R.	Saturday	Aug. 5
Panama	P. R. R.	Saturday	Aug. 12
Advance	P. R. R.	Friday	Aug. 18
Colon	P. R. R.	Thursday	Aug. 24
Allianca	P. R. R.	Wednesday	Aug. 30

CRISTOBAL TO NEW YORK.

Ancon	P. R. R.	Saturday	June 17
Advance	P. R. R.	Sunday	June 18
Colon	P. R. R.	Saturday	June 24
Allianca	P. R. R.	Friday	June 30
Panama	P. R. R.	Thursday	July 6
Advance	P. R. R.	Wednesday	July 12
Colon	P. R. R.	Wednesday	July 19
Allianca	P. R. R.	Tuesday	July 25
Panama	P. R. R.	Monday	July 31
Advance	P. R. R.	Sunday	Ang. 6
Colon	P. R. R.	Saturday	Aug. 12
Allianca	P. R. R.	Friday	Aug. 18
Panama	P. R. R.	Thursday	Aug. 24
Advance	P. R. R.	Wednesday	Aug. 30

NEW YORK TO COLON.

Santa Marta	U. F. C.	Thursday	June 8
Prinz Sigismund	H.-A.	Friday	June 9
Trent	R. M.	Saturday	June 10
Metapan	U. F. C.	Thursday	June 15
Prinz Joachim	H.-A.	Saturday	June 17
Zacapa	U. F. C.	Thursday	June 22
Prinz Eitel Friedrich	H.-A.	Friday	June 23
Magdalena	R. M.	Saturday	June 24
Almirante	U. F. C.	Thursday	June 29
Prinz Aug. Wilhelm	H.-A.	Saturday	July 1
Santa Marta	U. F. C.	Thursday	July 6
Clyde	R. M.	Saturday	July 8
Prinz Sigismund	H.-A.	Friday	July 7
Metapan	U. F. C.	Thursday	July 13
Prinz Joachim	H.-A.	Saturday	July 15

COLON TO NEW YORK.

Almirante	U. F. C.	Thursday	June 15
Prinz Aug. Wilhelm	H.-A.	Tuesday	June 20
Santa Marta	U. F. C.	Thursday	June 22
Prinz Sigismund	H.-A.	Saturday	June 24
Clyde	R. M.	Tuesday	June 27
Metapan	U. F. C.	Thursday	June 29
Prinz Joachim	H.-A.	Tuesday	July 4
Zacapa	U. F. C.	Thursday	July 6
Prinz Eitel Fredrich	H.-A.	Saturday	July 8
Atrato	R. M.	Tuesday	July 11
Almirante	U. F. C.	Thursday	July 13
Prinz Aug. Wilhelm	H.-A.	Saturday	July 18
Santa Marta	U. F. C.	Thursday	July 20
Prinz Sigismund	H.-A.	Saturday	July 22

NEW ORLEANS TO COLON.

Turrialba	U. F. C.	Saturday	June 10
Parismina	U. F. C.	Wednesday	June 14
Abangarez	U. F. C.	Saturday	June 17
Atenas	U. F. C.	Saturday	June 24
Turrialba	U. F. C.	Saturday	July 1

COLON TO NEW ORLEANS.

Atenas	U. F. C.	Thursday	June 15
Cartago*	U. F. C.	Thursday	June 15
Turrialba	U. F. C.	Thursday	June 22
Parismina*	U. F. C.	Thursday	June 22
Abangarez	U. F. C.	Thursday	June 29

The Hamburg-American steamers leave Colon for New York via Kingston at 10 a. m. on sailing dates. The *Prinz August Wilhelm* and *Prinz Joachim* call at Santiago, Cuba, on both outward and homeward voyages. A ship will leave Colon for Bocas del Toro at 5 p. m. on June 14 and July 12, and for Port Limon at 5 p.m. on June 14.

The Leyland line steamer *Louisianian* sails for Tampa, Fla., via Port Limon, on or about Sunday, June 25.

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships designated (*) for New Orleans via Port Limon and Puerto Barrios on Thursday at 4 p. m.; ships for New York via Kingston on Thursday at 11 a. m.; for Bocas del Toro on Monday at 6 p. m.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, JUNE 21, 1911. No. 43.

The Canal Record

Published weekly under the outhority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission ond Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer

NOTES OF PROGRESS.

Acting Chairman's Report.

The report of the Acting Chairman of the Isthmian Canal Commission for the month of May is published in full in other columns of this issue of The Canal Record. It gives a detailed account of the progress of Canal work in all departments and divisions.

Culebra Cut Slides.

In carrying out the plan of reducing the amount of material that will slide into Culebra Cut from the banks by lightening the mass that has broken away from the hill on both sides of the Canal at Culebra, a steam shovel has been set at work on the east bank taking earth from the top. This shovel is now digging through a dump formed by the French in their work. A trestle is being driven extending across the lowland, from a point about half a mile from the center line of the Canal, a distance of 1,400 feet, and the material dug out will be wasted over this trestle. It will have a capacity of 60,000 cubic yards, and the dump can be extended indefinitely by merely shifting the tracks.

On the west side of the Canal at Culebra, three steam shovels are digging from the top of the slide. The work of tearing down buildings in the area that threatens to move is advancing rapidly. The post-office is being reerected near the railroad station on the west slope of the hill, and not far from it a mess hall of the pavilion style is practically completed to take the place of the old hotel. Several cottages for American employes, formerly situated on the site of the slide, are likewise being reerected near the new post-office. The fire company house, which is now on the edge of the Cut, will be moved to a site alongside the Administration Building, and work on the foundations is under way.

Three small slides in the east bank opposite Empire have made it necessary to move the highway back from the edge of the Cut in three places, the average detour being about 150 feet at each place.

There have been no new breaks in the slides, and the five largest ones are not moving at present. At Cucuracha, only a thin stream of mud is moving toward the Canal, and one steam shovel has no difficulty in controlling the whole slide. Of the total of about 19,000,000 cubic yards yet to be taken from Culebra Cut, it is estimated that over 2,000,000 yards are in slides.

Machines for Operating Lock Gates.

Award has been authorized for two miter gate moving machines (item 1, class 1, circular No. 627), for operating the lock gates, to the Wheeling Mold and Foundry Company, the lowest bidders.

Award has also been authorized, conditionally, for one sample miter forcing machine to the Richard Manufacturing Company of Bloomsburg, Pa. This is item 1, class 2 of circular No. 627.

Award on classes 3 and 4, circular No. 627, for motors to actuate the machines in classes 1 and 2, is withheld until further study has been made.

In case the sample machines, purchased in accordance with the awards as indicated above, give satisfaction on test and trial, 90 more of the miter gate moving machines, and 45 more of the miter forcing machines will be ordered from the same contractors. In that event, the total cost of the miter gate moving machines will be about $652,000, and of the miter forcing machines, $41,200.

Ten bids were received for the miter gate moving machines, varying from $652,000 to $862,000. The lowest bid is about ten per cent less than the estimated cost. Twelve bids were received for the miter forcing machines, varying from $41,200 to $71,500.

An article descriptive of the machines was published in The Canal Record of April 26.

Reclaiming Swamp Land at Balboa.

The reclaiming of tidal swamp land in the reservation between the line of the Panama railroad, the wagon road to Balboa, and Sosa and Ancon hills at East Balboa, has been begun. This will be accomplished by dumping spoil from Culebra Cut to an average depth of six feet. which will bring the area to the elevation of the Panama railroad tracks. The filling will be done in such a manner that the land will slope from the center toward either hill, thus insuring natural drainage. It is estimated that about 600,000 cubic yards will be dumped there, and that about 66 acres will be reclaimed. The land is now flooded at high tide, and, although drained, it is never entirely dry.

Naos Island Breakwater.

The end of the trestle on the breakwater at the Pacific entrance to the Canal is now only 2,700 feet from Naos Island, the outer terminus. Since December, 1910, it has been extended 1,850 feet, and, although there has been a constant sinking of the track, the advance has also been constant. The total disappearance of parts of the fill below the water surface, and the continued sinking of large sections of the trestle and fill, which characterized the work in 1909 and 1910, have ceased, and it seems probable that the most difficult part of the filling is over.

Changes in Hydraulic Excavation Work.

Some important changes have been made in the method of excavating hydraulically in the lower lockpit at Miraflores, and in the Canal prism south of that point. Heretofore, the plan has been to dislodge the material in the sides and at the bottom of the excavation by monitors, which sluiced it to where the dredge pumps mounted on concrete barges, could lift it into the fill of the west dam, or elsewhere, as desired. This plan provided for settling the concrete barges into sumps, and it is owing principally to the difficulty experienced in getting the barges in a suitable working position that it has been decided to abandon them. Stumps and the trunks of old trees that had become buried in the soil covering the site of the hydraulic operations in the lower lock at some previous period were among the obstacles encountered in settling the barges effectively. Under the new arrangement, sumps will be created to various depths in the area to be excavated, and the pumps removed to positions alongside. This will do away with any need for the three concrete barges built expressly for mounting the dredge pumps and motor equipment, and one of them has already been dynamited and removed. It is proposed to break up a second one due to the difficulty of getting it out of its present position, but the third may be removed and used elsewhere.

The depth has reached a stage that permits a change in the method of working the hydraulic monitors. or giants. Instead of directing the play of the water against the surface of the material, the process of undercutting, which will allow the overhead mass to fall in as the work proceeds, will, in future, be employed. Hydraulic operations, which were temporarily suspended on account of the break at the Miraflores dam spillway, were resumed last week with two of the four dredge pumps, Nos. 1 and 3, the first working at the lower lock site, and the latter in the prism south of the old dike, both pumping into the fill of the west dam. Dredge pump No. 2 has been shipped to Gorgona shops for repairs, and it is proposed to install temporarily in its place, the relay pump originally purchased for relaying the material into the fill of the dam. The relay pump will be located directly in front of Cocoli Hill, a section of which, extending back as much as 200 feet in one place, will have to be removed in excavating the Canal prism to the required width. The face of this hill contains a great many small boulders which the relay pump is particularly well adapted to handle, inasmuch as its impeller admits pieces of rock eight inches

NOTES OF PROGRESS.

(Continued.)

in size, compared with six-inch pieces, the maximum size handled by the other pumps. It is estimated that the greater proportion of the boulder material found in this locality can be sluiced and pumped out in this manner. The sump where the relay is to be situated will be the main one; it will be sunk to 55 feet below sea level, and the dredge pump will occupy a position on a bench alongside about 25 feet below sea level.

P. R. R. Steam Shovel Records for May.

For the fifth consecutive month, the excavation on the Panama Railroad relocation exceeded all previous records, amounting to 416,518 cubic yards. Of this amount, 164,363 cubic yards were classified as earth, 13,670 cubic yards as loose rock, and 238,485 cubic yards as solid rock. Company forces removed 406,613 cubic yards, and 9,905 cubic yards were removed by contractor. Steam shovels excavated 387,427 cubic yards, pan car task gangs took out 16,660 cubic yards, and 2,246 cubic yards were excavated for culvert foundations.

The best steam shovel record was made by steam shovel No. 257, working in the Gatun section, which excavated 70,030 cubic yards of rock. This shovel has held the record on the Isthmus for the past four months.

In the 70-ton class, the best record was made by steam shovel No. 110, working near Paraiso on the Gold Hill line, which excavated 25,635 cubic yards of earth, and 11,555 cubic yards of rock, a total of 37,190 cubic yards.

A high day's record for shovels with 5-yard dippers was made by steam shovel No. 262, working at Monte Lirio, which took out 4,330 cubic yards of earth and rock on May 31.

The best day's record for 70-ton shovels was made by steam shovel No. 105, working near Monte Lirio, which excavated 2,060 cubic yards of earth on May 26.

Month's records are place measurement, and days' records are car measurement. All material is loaded in 10-yard Western dump cars.

BEST RECORDS FOR THE MONTH.

Shovel No.	Location.	Cubic Yards by Cross Section.			
		Days worked.	Earth	Rock.	Total.
257	Gatun	26	....	70,030	70,030
262	M. Lirio..	26	19,240	38,400	57,640
110	Paraiso ...	26	25,635	11,555	37,190
113	Bas Obispo.	26	3,697	33,210	36,907

Total output during month of May, 1911, 387,427 cubic yards.

Total number steam shovel working days, 248.

Average output per working day, 1,562 cubic yards.

Lights on Pacific Coast of Panama.

At the request of the Government of Panama, Mr. Walter F. Beyer, formerly of the lighthouse establishment in the United States, now assistant engineer in charge of the work of lighting the Canal, has been directed to assist in the work of providing lights for the Pacific coast of the Republic. Among the locations where it is proposed to place lights are Cape Mala, Melones, Bonas, and Tortolita Islands, and San José Island in the Pearl Islands archipelago. The supply boat Chamé, belonging to the dredging fleet at the Pacific entrance, will leave Balboa on Wednesday night, June 21, with Mr. Beyer and a party of Panama officials, to inspect the proposed sites.

Sinking of Dredge "No. 6."

No. 6, one of the old French ladder dredges at work in the Atlantic entrance to the Canal, sank about one o'clock Monday morning at a point in the channel near the intersection of the French canal, and rests on the bottom in about 40 feet of water. The vessel is thought to have sprung a leak, and turned over. Four of the crew were on board at the time. Two of them, colored men, were drowned; the other two swam to safety.

CONCRETE WORK IN THE LOCKS.

About 55 per cent of the concrete for all the locks is in place, the amount at the close of work on June 17 being 2,338,051½ cubic yards, out of a total of approximately 4,284,400. A total of 23,899½ cubic yards of concrete was laid in the locks during the week ending June 17.

GATUN LOCKS.

Over 67 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of work on June 17, being 1,402,998½ cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending June 17, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 6 hours.

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
June 12	1,108	17:02	4	680	8:40	2	176½	1,964½
June 13	1,252	29:30	4	166	2:00	2	142½	1,560½
June 14	1,446	27:31	7	674	8:40	2	155½	2,275½
June 15	1,618	31:23	7	560	8:40	2	264½	2,442½
June 16	1,890	30:47	7	552	8:40	2	215½	2,657½
June 17	1,174	31:00	6	598	8:40	2	106	1,878
*Portable mixers	....	....	......	323	....	......	....	323
Total	8,488	167:13	5,83	3,553	....	2	1,059½	13,100½
Previously reported	....	....	......	....	....	......	....	1,389,898
Grand total	....	....	......	....	....	......	....	1,402,998½

*The 323 yards shown for the portable mixers are reenforced concrete, and were placed on the following days: June 12th, 28; June 13th, 56½; June 14th, 62½; June 15th, 44; June 16th, 64; June 17th, 68.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is over 79 per cent completed, 665,766 cubic yards, out of a total of 837,400, having been placed at the close of work on June 17 The record for each of the six eight-hour working days of last week, follows:

Date.	Auxiliary Plant.						Large stone.	Total
	2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
June 11	122	5:00	1	....	....	......	....	122
June 12	798	19:00	3	....	....	......	....	798
June 13	490	12:00	3	....	....	......	74	564
June 14	640	14:00	3	....	....	......	40	680
June 15	878	19:00	3	60	8:00	1	4	942
June 16	562	12:00	3	49	5:00	1	20	631
June 17	606	13:00	3	21	2:50	1	50	677
Total	4,096	94:00	3.02	130	15:50	1	188	4,414
Previously reported	....	....	......	....	....	......	4,204	661,352
Grand total	....	....	......	....	....	......	4,392	665,766

MIRAFLORES LOCKS.

About 20 per cent of the concrete for the system of two twin locks at Miraflores was in place on June 17, the total amount on that date being 269,287 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant.							Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
June 12..	722	17:33	4	....	....	......	188	14:75	3	....	910
June 13..	894	19:33	4	....	....	......	259	16:50	2	....	1,153
June 14..	840	21:83	4	....	....	......	279	20:50	3	....	1,119
June 15..	466	23:50	4	....	....	......	480	23:50	3	....	946
June 16..	564	13:50	4	....	....	......	316	14:50	4	....	880
June 17..	922	21:40	4	....	....	......	455	21:50	3	....	1,377
Total..	4,408	116:89	4	....	....	......	1,977	111:25	3	....	6,385
Previously reported.	....	....	......	....	....	......	....	....	......	3,693	262,902
Grand total...	....	....	......	....	....	......	....	....	......	3,693	269,287

ORDINANCE

Providing for the Licensing and Regulation of Bicycles in the Canal Zone.

Be it enacted by the Isthmian Canal Commission:

Section 1. Before any bicycle shall be ridden or operated over any of the streets or roads of the Canal Zone, the owner or custodian of such bicycle shall secure from the Collector of Revenues a license authorizing the use of such bicycle over said streets and roads, and the owner or custodian shall also secure from the Collector of Revenues a metal tag bearing thereon, in plainly visible numerals not less than two inches in height, the serial number of the license issued to cover the use of such bicycle.

Section 2. The Collector of Revenues shall register the name of the owner or custodian of each bicycle licensed by him, together with the number of the license and metal tag furnished the owner or custodian, and a brief description showing the name of the manufacturer and factory number of the bicycle.

Section 3. No bicycle shall be ridden or operated over the streets or roads of the Canal Zone unless it shall bear thereon the aforesaid numeral metal tag prominently displayed beneath the saddle thereof; nor shall it be so ridden or operated between the hours of 6:30 p. m. and 6 a.m., unless it shall also carry and prominently display a headlight. No bicycle shall be operated unless it carries a bell or horn whereby signals of warning shall be given by the rider to persons and vehicles met or overtaken on the aforesaid streets or roads.

Section 4. It is hereby made the duty of all persons who may rent bicycles to others for use to keep a full record, showing the name of each person to whom such rental is made, the license number of the bicycle, and the hour it returns; and it shall be the duty of each person renting bicycles to others to carefully preserve such record and to at all times permit the members of the Zone police or of the office of the Collector of Revenues to examine such records.

Section 5. The bicycle license herein provided for shall be issued to cover the unexpired portion of the fiscal year in which it is issued, and the party receiving same shall pay to the Collector of Revenues the sum of one dollar ($1) for the license and numeral metal tag, which shall entitle the bicycle so licensed to be ridden over any of the streets of the Canal Zone during the license period.

Section 6. No bicycle shall be ridden over the streets or roads of the Canal Zone at a greater speed than seven (7) miles an hour in cities, towns, or villages, nor at a greater rate of speed outside of cities, towns, or villages than fifteen (15) miles an hour on straight roads, or eight (8) miles an hour when approaching curves, forks, or crossroads.

Section 7. The Collector of Revenues shall promptly furnish to the Chief of Police statements showing to whom he has issued the bicycle licenses herein provided for, and the Chief of Police shall, in turn, transmit to the Canal Zone police stations the information shown by such statements.

Section 8. Any person who rides a bicycle over any road or street of the Canal Zone, without there being displayed thereon the license numeral tag herein required, or who fails to comply with the requirements of this Ordinance as to lights and signals, or any owner or custodian who shall rent or loan to another any bicycle for the use of which the license herein required has not been secured, or any other person who shall fail to comply with any requirement herein imposed on him, shall be deemed guilty of a misdemeanor, and upon conviction, shall be fined not exceeding twenty-five dollars ($25) for each offense.

Enacted by the Isthmian Canal Commission at its 160th meeting, April 15, 1911.

Approved by the Secretary of War, April 26, 1911.

Observance of Coronation Day.

The West Indian negroes employed on the Canal and railroad, who are British subjects, will celebrate the coronation of King George the Fifth and Queen Mary on June 22, by a general holiday. The Commission has granted a day's leave, without pay, to all British subjects.

There will be services in Christ Church, Colon, and in St. James' Church, Empire, at 7:30 a. m., the hour which will correspond with the time of the coronation service in Westminster Abbey. An official service will be held in Christ Church at 9:30 a. m., following which there will be a procession of the members of the congregation, headed by the school children and the "lads' brigade," with fife and drum corps. The parade will proceed to the British consulate, where the children will sing the national anthem, and the special coronation hymn written and composed by C. D. Nurse and B. Clinton Davis, the latter the organist of Christ Church. The governor of Colon has granted the use of the playground for the children of the parish school, where a treat will be served. The municipal band will play. In the evening, there will be a parade of the different societies, followed by a display of fireworks. At New Gatun, there will be a street parade and athletic sports in the afternoon.

The West Indians from the other villages in the Canal Zone will unite with those of the city of Panama in a street parade. They will proceed to the British legation, thence to the National theatre, where there will be addresses. A song service will be held in the Wesleyan Methodist Church, Panama, on the evening of June 22, and the coronation service will be held on Sunday morning, June 25.

The British subjects in the Canal Zone and on the Isthmus have subscribed a fund of $3,500 for a coronation memorial. A cable message will be sent to the King and Queen, and, as a souvenir of the day, each subscriber will receive a King George button and a lithograph copy of the cable message.

The Fourth of July at Cristobal.

The water sports will form one of the most interesting features of the celebration of July 4 to be held at Cristobal. They will begin at 2 o'clock in the afternoon and be over about 4.30; and at night there will be the illuminated boat parade in the harbor. The afternoon events will include a sail boat race, aquatic boxing contest, Navy steam cutter race, swimming contest, three races for lifeboats, two races for gasoline boats, a race for native canoes, American canoes, dorys, and life rafts, relay swimming contest, fancy diving contest, swimming race for boys, human duck hunt, tub race, climbing a greased spar. All the events are open and free, and entries should be made to the chairman of the aquatic committee, dock No. 13, Cristobal, on or before June 30.

Details of the decorations have been completed. The center of the exercises will be the Court of Honor, built near the Subsistence Department office on Roosevelt avenue. In it will be erected stands for the speakers, the children, and the bands. Nearby there will be stands for the sale of light refreshments, and for the playing of county fair games. A light lunch will be served on dock No. 11 free, from 11 to 2 o'clock.

Captain Horton W. Stickle, under whose direction the plans have advanced so far, has resigned as chairman of the committee, and Mr. W. G. Comber has been named in his stead.

Gatun Dam Spillway.

The concrete work in the spillway of Gatun Dam is over 62 per cent completed, 140,643 cubic yards, out of a total of 225,000, having been placed at the close of work on June 17. A statement of the amount laid each working day last week, and of the total in place, follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
June 12	128	4:00	1
June 13	136	6:00	1
June 14	260	8:00	2
June 15	148	6:30	1
June 16	192	6:00	1
June 17	134	5:00	1
Total	998	35:30	1.16
Previously reported	139,645	....	....
Grand total	140,643		

Red Cross Announcement.

The Red Cross has an organization in each district, with chairmen, as follows: Dr. A. J. Orenstein, Ancon; Alexander P. Crary, Corozal; J. T. Smith, Pedro Miguel; Edw. Schildhauer, Culebra; T. L. Clear, Empire; J. B. Fields, Las Cascadas; W. B. Wheeler, Bas Obispo; B. M. Litt, Gorgona; Dr. Geo. H. Gorham, Tabernilla; Major Chester Harding, Gatun; Wm. F. Bennyhoff, Cristobal.

The organization is prepared to take up the relief of any case recommended by the local chairman within 24 hours, or earlier, if practicable, after receipt of notice.

A monthly notice of the expenditures of this organization, showing individual cases of relief, is published in THE CANAL RECORD for the information of all concerned.

C. A. DEVOL,
Chairman, Canal Zone Chapter,
American National Red Cross.

CULEBRA, C. Z., June 14, 1911.

United Fruit Company's Transatlantic Service.

The United Fruit Company has discontinued its coastwise service between Colon and New Orleans, maintained by the steamships *Heredia*, *Parismina*, and *Cartago*, and, beginning June 29, will place them in service between Colon and Southampton, England. The first steamer to leave Colon on the new schedule will be the *Heredia*, its departure being set for Thursday, June 29. It will leave Limon on July 1, and arrive at Port Morant, Jamaica, on July 3, sailing from there direct for Southampton, where it is due to arrive about July 17. The *Parismina* will leave Colon on July 13, and the *Cartago* on July 27, the sailings being fortnightly. Passengers from Colon for Puerto Barrios, Guatemala, will be transferred at Limon.

CANAL WORK IN MAY.

Monthly Report of the Acting Chairman and Chief Engineer to the Secretary of War.

CULEBRA, C. Z., June 15, 1911.

The Honorable the Secretary of War,
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of May, 1911:

Department of Construction and Engineering.

The following table summarizes the principal items of construction work accomplished by the Atlantic, Central, and Pacific Divisions during the month:

ITEM.	Unit.	Atlantic.	Central.	Pacific.	Total.
Work excavation, dry	Cubic yards	82,159	1,303,979	97,325	1,483,463
Work excavation, wet	Cubic yards	514,178	24,904	548,047	1,087,129
Total work excavation	Cubic yards	596,337	1,328,883	645,372	2,570,592
Plant excavation, dry	Cubic yards	....	....	....	....
Plant excavation, wet	Cubic yards	....	....	....	....
Total plant excavation	Cubic yards	....	....	....	....
Total Canal excavation	Cubic yards	....	....	....	....
Material placed in dams	Cubic yards	627,099	....	48,385	675,484
Concrete placed in locks and dams	Cubic yards	71,500	....	55,289	126,789
Explosives used	Tons (Gross)	77.44	231.63	32.53	341.60
Rock drilled	Feet	67,271	428,276	68,687	564.234
Tracks removed	Miles	....	12.91	....	12.91
New tracks laid	Miles	1.82	18.30	5.98	26.10
Rock crushed	Cubic yards	58,383	101	58,893	117,377
Cement used	Barrels	65,790	769	56,935	123,494
New roads built	Miles	0.41	....	5.28	5.69
Water mains laid	Feet	6,384	2,749	956	10,089
Sewers laid	Feet	853	2,273	....	3,126
Open drains and ditches dug	Feet	15,375	....	6,123	21,498
Average daily force	....	7,433	7,836	4,437	19,706
Average rainfall	Inches	18.51	13.83	9.21	13.78

Atlantic Division.

GATUN LOCKS.

Shovel excavation in the lower lock, south of the caisson sill, was completed. Considerable difficulty was experienced, due to slides, on both the east and west sides of the lower lock. Clay excavation for obtaining impervious material for back fill was continued. A total of 26,411 cubic yards of material was removed. Of this amount, 11,726 cubic yards were excavated outside the prism for back fill. On May 31 the total excavation amounted to 5,856,479 cubic yards, of which 5,024,609 cubic yards were removed from the prism. The shovel excavation in the locks was 99.5 per cent completed, and the excavation of the culvert trenches by crane 85 per cent completed. The channeling work for lateral culverts was completed during the month.

Back fill—Back filling behind the walls of the upper and middle locks was continued, and back filling in the center wall of the upper lock commenced. The quantity placed during May aggregated 66,108 cubic yards, increasing the total to 490,563 cubic yards. A new estimate was prepared during the month of the total amount of back fill necessary, including the amount required in the center wall and in the extension of the side walls to the north. On the basis of the new estimate, the back filling was 30.33 per cent completed. On May 15 one of the duplex cableways used in placing concrete was permanently detached from that service, and will be utilized in future in placing back fill in the center wall; and for miscellaneous steel work; and for finishing work.

Receiving and Issuing Material—The receipts of all material during the month were satisfactory, and exceeded the consumption.

Mixing and Placing Plants—Both plants, and all portable mixers, were kept in satisfactory operation during the month.

Power Plant and Pumps—The operation of the power plant and pumps was satisfactory.

Iron and Steel Work—During the month, 333.4 tons of fixed steel, 83.6 tons of rail reinforcement, and 13,617 feet of reinforcing rods were placed.

Concrete Work—There was an increase of 483 cubic yards in the amount of concrete laid, as compared with the figures for the preceding month. The daily average for the 26 working days was 2,609 cubic yards, as compared with a daily average during April of 2,806 cubic yards. The total amount of concrete placed during the month was 67,844 cubic yards, including 5,406¾ cubic yards of large stone. The bucket measurement exceeded the place measurement by 215 cubic yards. Of the total concrete, 5,629½ cubic yards were placed in the upper lock, 15,536 cubic yards in the middle lock, and 46,678½ cubic yards in the lower lock. The concrete work for the entire lock system was 65.7 per cent completed at the end of May.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS, GATUN LOCKS.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)	11.56	8.50
Average number of hours per day worked per strand of cableway laying concrete and large stone (actual working time)	6.50	....
Average number of mixers per day	5.50	2.00
Average hourly output per mixer, (actual working time) cu. yds.	58.43	66.63
Average amount of concrete and large stone laid per hour, per strand of cableway, (actual working time) cu. yds.	31.39	....
Large stone laid, cu. yds	2,969¾	2,437
Concrete laid, cableways, cu. yds.	41,749	....
Concrete laid, through chute into dump cars, cu. yds	4,878	....
Concrete laid, derricks, cu. yds	....	3,644
Concrete laid, dump cars, cu.yds.	....	10,822
Concrete laid, portable mixers	....	1,559¼
Total amount concrete and large stone laid, cu. yds.	49,596¾	18,462¼

Concrete from the auxiliary plant was placed by five derricks, and with dump cars.

GATUN DAM.

Construction during the month increased the total fill, as determined by cross sections of the material in place, by 627,099 cubic yards, making the total amount in place 14,074,812 cubic yards.

Hydraulic Fill—The dredges increased the hydraulic fill by 419,348 cubic yards. The total hydraulic fill in place May 31 was 7,421,766 cubic yards.

Dry Fill—The material received from the Central Division, the Locks, Mindi, and steam shovels Nos. 51 and 134, amounting to 207,751 cubic yards, was placed on the north and south toes of the Dam, east and west of the Spillway, making the total dry fill in place 6,653,046 cubic yards.

GATUN SPILLWAY.

Excavation—In preparing foundations of the spillway dam, 2,051 cubic yards of rock were excavated, of which 251 cubic yards were excavated by steam shovel No. 51, and 1,800 cubic yards by hand. On May 31 the total spillway excavation amounted to 1,582,845 cubic yards.

Concrete—The work of placing concrete behind the east coffer-dam was continued. The amount of concrete placed during the month aggregated 3,656 cubic yards, which increased the total to 138,916 cubic yards. The concrete work for the Spillway was 61.74 per cent completed.

HARBOR AND CHANNEL SECTION.

Excavation Below Sea Level at Mindi—During the month, three steam shovels removed 16,210 cubic yards of earth and 42,772 cubic yards of rock from the Canal prism. In addition, 5,500 cubic yards of earth were sluiced by pumping plant.

Dredging from the Ocean to Mindi—Five dredges removed 471,653 cubic yards of earth and 42,520 cubic yards of rock from the Canal prism. In addition, the dredge *Mindi* removed 800 cubic yards of earth at the cement dock in Gatun. On May 31st, 40 feet of water could be carried from zero to zero plus 2,600 feet; 35 feet to mile 3 plus 900 feet; 30 feet to mile 4 plus 700 feet; 20 feet to mile 5 plus 2,438.9 feet, at the junction with the French canal.

PORTO BELLO.

PERFORMANCE OF ROCK CRUSHER PLANT.

Length of working days—hours From 1st to 31st, inclusive	8.00
Average number of hours worked per day	5.65
Average number of cubic yards per hour of working day	281.20
Average number of cubic yards per working hour	397.60
Maximum day's output, (7 hours 10 minutes) cu. yds	3,404.00
Average day's output (26 days) cu. yds.	2,249.00
Average hourly output, (208 hours) cu. yds.	281.20
Total output for the month, cu. yds.	58,383.00

SAND, STONE, AND CEMENT SERVICE.

In connection with this service, plant steamed 8,452 miles, handled 811 barges, and carried 2,509 passengers.

TORO POINT.

Colon Breakwater—Thirty-eight thousand five hundred and thirty-four cubic yards of material were excavated, of which amount 1,375 cubic yards were placed in track fill, and 37,159 cubic yards in breakwater fill. The double track trestle was extended 558.5 linear feet. On May 31 the trestle extended 4,772.5 feet from shore. The total amount of rock dredged and dumped on the west breakwater to May 1, 1911, was 556,189 cubic yards. During the month, 42,520 cubic yards were dredged and dumped, increasing the total to 598,709 cubic yards. The amount of dry fill placed to June 1 was 308,560 cubic yards.

NOMBRE DE DIOS.

During the month, 78 barges, containing 38,653 cubic yards of sand, were shipped to Gatun.

MUNICIPAL ENGINEERING.

The reservoirs, water mains, sewers, roads, and oil pipe lines were maintained and extended as required to facilitate construction work. Work was continued on the Colon municipal improvements.

Central Division.

During the month of May, the total amount of material excavated in the Central Division was 1,328,883 cubic yards, of which 165,897 cubic yards were classified as earth, and 1,162,986 cubic yards as rock. Of this quantity 1,298,240 cubic yards were removed by steam shovels, 360 cubic yards by bucket cranes, and 1,863 cubic yards by hand. Contractors removed 24,904 cubic yards by sluicing and 3,516 cubic yards by hand. Of the total, 1,328,383 cubic yards consisted of primary excavation for the Canal prism, and 500 cubic yards for permanent diversion useful after the Canal is completed. The total work excavation amounted to 1,328,883 cubic yards.

The daily average number of steam shovels at work during the month was 38.62, and the total number of shovel days was 1,004, as compared with 44.71 shovels at work during the month of April, with 1,073 shovel days.

For comparison with the work done by steam shovels during the corresponding month of the previous year, the following table has been prepared:

Period.	Excavated by shovels.	Classification of material.		Av. No. of shovels at work	W'kg days.	Av. yards per shovel day.
		Rock.	Earth.			
1910:	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*			*C. Y.*
May....	1,331,758	954,325	377,433	44.80	23	1,189.10
1911:						
May....	1,298,240	1,149,886	148,354	38.62	26	1,293 08

Rainfall at Empire: 1910, 11.08 ins.; 1911, 13.74 ins.

The above table shows the average output per shovel to be 8.74 per cent greater in May, 1911, than in the corresponding month of the previous year.

The total amount of material excavated from the prism in the Culebra section of the Central Division in May, 1911—1,298,600 cubic yards—was the highest record in that section for the month of May, the previous high record for the month having been in May, 1909, when 1,126,963 cubic yards were removed.

The total estimated amount of material to be removed in the Central Division was 97,125,018 cubic yards, and up to June 1, 1911, 75,904,931 cubic yards had been removed, leaving 21,220,087 cubic yards to be removed in order to complete all excavation in the Central Division. From these figures it will be seen that 78.15 per cent of all excavation in the Central Division had been completed up to the close of the month of May, and 21.85 per cent remained uncompleted.

Considering the two sections which compose the Central Division, the excavation completed, and that to be completed, at the close of May operations were, as follows:

CULEBRA SECTION.	*Cu. Yds.*
Completed	64,113,849
To be completed	20,072,875
CHAGRES SECTION.	
Completed	11,791,082
To be completed	1,147,212

From the above figures it will be seen that the Culebra section, locally known as the Culebra Cut, was 76.16 per cent completed, with 23.84 per cent to be completed; the Chagres section was 91.13 per cent completed, with 8.87 per cent to be completed.

During the month, 2,100 cubic yards of material were hauled from the Canal prism and dumped in the embankment for the roadbed of the relocated Panama railroad at Frijoles. The total amount of spoil from the Central Division used for this purpose at the close of the month was 3,830,137 cubic yards. The Central Division also delivered at Gatun 209,594 cubic yards of rock and earth for use in the construction of the Dam, making the total for this purpose at the end of May, 3,565,461 cubic yards. In addition, 350 cubic yards of rock and earth were transported from Culebra Cut to Colon to be used by the Panama railroad in building the new sea wall.

The daily average number of laborers at work on the whole division during the month was 7,041, and the daily average number of gold employes 795.

Pacific Division.

DISTRICT NO. 1—LOCKS AND DAMS.

Excavation—The total excavation during the month amounted to 97,325 cubic yards.

Filling and Embankment—During May, no additional dry filling was added to the prism of the west dam at Pedro Miguel, the total amount of material in place at the close of the month remaining at 260,852 cubic yards, as previously reported. The back fill at Pedro Miguel was increased by 14,420 cubic yards, the total in place at the end of the month amounting to 264,454 cubic yards.

At Miraflores, 30,032 cubic yards were added to the dry fill in the toes, and 18,353 cubic yards to the hydraulic fill in the core of the west dam, making the totals at the end of the month 788,184 cubic yards and 528,874 cubic yards, respectively. The back fill was increased by 16,021 cubic yards, the total aggregating 158,446 cubic yards at the end of the month.

PEDRO MIGUEL LOCKS.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT PEDRO MIGUEL.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)	8.00	8.00
Average number of hours per day, worked laying concrete and large stone (actual working time)	7.68	4.49
Average number of mixers per day	*2.00	†2.77
Average hourly output per mixer (actual working time)	*Cu. Yds.* *40.46	*Cu. Yds.* 20.49
Average amount of concrete and large stone laid per hour, per chamber crane (actual working time)	57.00	....
Large stone laid	....	2.00
Concrete laid	11,388.00	7,745.00
Total concrete laid	11,388.00	7,747.00

*1 berm crane from 1st to 19th, inclusive. Dismantling began on 20th.

†Auxiliary plant consisted of 1.12 half-yard mixers per day and 1.65 two-cubic yard mixers per day, and locomotive cranes and derricks placing; 1 half-yard mixer discharging directly into forms.

The back filling of the east and west walls was continued. Chamber cranes Nos. 2 and 4 were dismantled by the McClintic-Marshall Construction Company, and the work of reerecting No. 2 in the east chamber of the Miraflores upper lock was 90 per cent completed at the end of the month. The dismantling of berm crane E was begun by the McClintic-Marshall Construction Company. During the month, the amount of iron placed aggregated 442,350 pounds.

Concrete Work—The total amount of concrete and large stone laid at Pedro Miguel was 19,135 cubic yards, as compared with 28,635 cubic yards during April. The concrete was placed, as follows: Two hundred and thirty-five cubic yards in the lower center guide wall; 1,325 cubic yards in the floors; 6,205 cubic yards in the east wall; 6,375 cubic yards in the west wall, and 4,995 cubic yards in the center wall.

MIRAFLORES LOCKS.

The dry excavation in the lower lock was continued. The excavation of the sump pit for draining the lock site was completed, and two 12-inch motor-driven centrifugal pumps were installed. These pumps were put out of commission on May 23, due to the flooding of the pit and lock site, caused by the spillway of the west dam giving away and discharging part of the hydraulically filled core into the lock site. Back filling behind the east wall was continued, and the auxiliary mixing plant, which is being installed in the east side wall near the lower end of the upper lock, was about two-thirds completed at the end of the month. Filling was continued in the east and west toes of the west dam. During the month, the amount of iron placed aggregated 225,040 pounds.

Concrete Work—The total amount of concrete and large stone laid was 36,154 cubic yards, as compared with 67,393 cubic yards during April. The concrete was placed as follows: Fourteen thousand eight hundred and eighty-eight cubic yards in the east wall; 16,875 cubic yards in the west wall; 1,391 cubic yards in the center wall, and 3,000 cubic yards in the floors.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT MIRAFLORES.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)	8.00	8.00
Average number of hours per day worked laying concrete and large stone (actual working time)	6.39	5.78
Average number of mixers per day	3.70	3.81
Average hourly output per mixer (actual working time)	*Cu. Yds.* 42.90	*Cu. Yds.* 20.12
Average amount of concrete and large stone laid per hour per berm or chamber crane (actual working time)	78.95	....
Large stone laid	....	....
Concrete laid	24,230.00	11,924.00
Total concrete laid	24,230.00	11,924.00

Permanent plant consisted of two berm cranes mixing and placing.

Auxiliary plant consisted of one 1-3 cubic yard, five ½-cubic yard, and two 2-cubic yard mixers, averaging 3.8 mixers per day, the output of which was discharged directly into forms or placed with derricks.

DISTRICT NO. 2—DREDGING.

The following is a statement of the output of the five dredges which were in operation during the month, and of the amount of material excavated hydraulically:

DREDGE.	Type.	WORK.		PLANT.		Total.	Remarks.
		Earth.	Rock.	Earth.	Rock.		
		Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*	
Cardenas	Dipper	62,017	21,685	....	....	83,702	Place measurement
Marmot	Ladder	80,916	....	....	....	80,916	Place measurement
Mole	Ladder	18,975	1,505	....	....	20,480	Place measurement
Badger	Ladder	120,233	....	....	....	120,233	Place measurement
Culebra	Suction	224,363	....	31,344	....	255,707	Scow measurement
Total	....	506,504	23,190	31,344	....	561,038	
Hydraulic excavation	....	*18,353	....	....	....	18,353	Place measurement
Grand Total	....	524,857	23,190	31,344	....	579,391	

*Excavated from Canal prism, south of Miraflores lock site.

CHAMÉ SAND EXCAVATION.

Approximately 38,500 cubic yards of sand were excavated at Punta Chamé and delivered at Balboa.

TEMPORARY WATER SUPPLY FROM CAIMITILLO RIVER.

From May 1 to 28, inclusive, a daily average of 600,000 gallons of water was pumped from the Caimitillo River to the tanks of the Cocoli pumping station, for the purpose of reducing the chlorine content of the water pumped from Cocoli Lake into the 16-inch Rio Grande supply main.

On the afternoon of May 28, work was begun laying 700 linear feet of 10-inch pipe from a point about 500 feet south of Miraflores yard office, connecting into the discharge line of the Caimitillo pump at the latter point, and running down the forebay to the concrete floor of the Miraflores upper lock chamber. This work was completed on May 29, and was performed for the purpose of supplying water to assist in flushing out mud and silt deposited in the lock chamber during break in the spillway of the west dam. This line is discharging approximately 3,000 gallons of water a minute in the lock chamber.

DISTRICT NO. 3—MUNICIPAL AND SANITARY ENGINEERING.

The reservoirs, water mains, sewers, roads, and oil pipe lines were maintained and extended as required to facilitate construction work. Work was continued on the municipal improvements in the city of Panama.

DISTRICT NO. 4—ANCON QUARRY.

PERFORMANCE OF ROCK CRUSHER PLANT.

	Hours.
Length of working day....................	8.00
Average number of hours per day (actual working time).......................	6.56
Average amount crushed per hour of working day.................................	*C. Y.* 283.12
Average amount crushed per working hour..	345.27
Total output for the month...............	58,893.00

Relocation of Panama Railroad.

During the month, 416,518 cubic yards of material were excavated, increasing the total excavation at the close of the month to 7,102,142 cubic yards, and 505,697 cubic yards of material were placed in embankment, increasing the total for this purpose to 12-746,275 cubic yards.

The average daily number of steam shovels at work was 9.54, and the total number of working days was 26.

For comparison with the work done by steam shovels during the preceding month, and during the corresponding month of the previous year, the following table has been prepared:

Period.	Excavated by shovels.	Classification of material.		Av. No. of shovels at work.	W'kg days.	Av. yards per shovel day.
		Rock.	Earth.			
1910:	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*			
May....	212,135	25,870	186,265	7.15	26	1,140
1911:						
April..	366,194	205,731	160,463	8.83	24	1,727
May....	387,427	242,885	144,542	9.54	26	1,562

During the month, 2,488 feet of temporary trestle were driven, and work on bridges and culverts was continued. No permanent track was laid during the month, the amount of 70-pound and 90-pound track remaining at 148,372 linear feet and 28,369 linear feet, respectively, as previously reported. The force averaged 2,298 men, in addition to those employed by contractors.

Quartermaster's Department.

Labor—The shortage of unskilled labor continued, and a number of applications from the construction divisions and from the relocation of the Panama railroad could not be filled. It is hoped that the shortage in the labor supply will be temporary.

Quarters—A large number of family quarters were vacated during the month, and a corresponding number of applications filled. Bachelor quarters at Gorgona were congested a few months ago, but there are now 110 vacancies, and arrangements are being made to use some of the houses as nonhousekeeping family quarters.

Buildings—Four of the five traveling gangs were engaged at Culebra on the work of demolishing and reerecting buildings. The post-office, time office, news stand, four laborers' barracks, and houses 6 and 65 were demolished during the month. It will also be necessary to remove the fire station and a type-5 house. The job work along the line during the month was unusually heavy, owing to the number of sanitary requests for repairs to screening.

Material and Supplies—Supplies during the month were delivered by 32 steamers, the total weight of cargo aggregating 40,823 tons, exclusive of 1,633,978 feet, board measure, of yellow pine lumber, 678,855 feet, board measure, Douglas fir lumber, and 2,903 crossties. The total value of material received during the month was $625,940.15.

Subsistence Department.

The operation of the European laborers' messes, the colored laborers' kitchens, and the line hotels showed a net profit of $2,014.73. The operation of the Hotel Tivoli showed a net profit of $2,307.30, and there was a net profit on restaurants, penitentiary, tugs, and dredges of $123.41. The net profit on subsistence operations was $4,445.44.

Department of Civil Administration.

COURTS.

During the month, two civil and one criminal cases were disposed of in the Supreme Court; 21 civil and 36 criminal cases in the Circuit Courts, and 81 civil and 496 criminal cases in the District Courts.

DIVISION OF POSTS, CUSTOMS, AND REVENUES.

Money order sales for May amounted to $390,285.20, and the fees to $1,757.61. Receipts from stamp and card sales, and newspaper postage aggregated $6,256.23. The total collection of revenues made by the division was $18,381.25, and the collection on account of court fines, costs and fees $2,454.60.

Twenty-nine vessels entered at and 25 vessels cleared from the port of Ancon; and 27 vessels entered at and 26 vessels cleared from the port of Cristobal.

DIVISION OF POLICE AND PRISONS.

The total number of persons arrested was 469, of whom 418 were men and 51 women. Forty-four nationalities were represented. The total number of arrests for the month was a decrease of 57, as compared with April. Sixteen convicts were committed to the penitentiary, and 14 were discharged, leaving 145 in confinement at the close of the month. The cost of guarding and subsisting the convicts was $2,606.25, and the value of their work on Canal Zone roads was $2,234.

DIVISION OF FIRE PROTECTION.

Ten fires were reported in the Canal Zone during the month, as compared with 19 in April. The damage to Commission property was $25, and to private property $30,725. Of this latter amount, $30,700 was due to the fire at Bas Obispo on May 7, seven buildings being consumed.

DIVISION OF PUBLIC WORKS.

In the city of Panama the average daily consumption of water was 1,321,721 gallons, and in Colon 856,562 gallons.

The usual inspection and maintenance work of this division was performed during the month.

DIVISION OF SCHOOLS.

The total enrollment in the white schools during the month was 1,127, and the average daily attendance 792.3, or 71 per cent of the enrollment; and in the colored schools, the total enrollment was 1,473, and the average daily attendance 471.5, or 32 per cent. Forty-three white and 24 colored teachers were employed in the division on May 31.

Department of Sanitation.

The total number of deaths from all causes among employes was 44. These were divided, as follows: From disease, 33, and from violence, 11, giving the annual average per thousand of 8.17 and 2.72, respectively.

The annual average death rate per thousand among employes for the month of May in previous years since American occupation was, as follows:

1904	5.35
1905	16.65
1906	24.79
1907	30.15
1908	10.44
1909	9.45
1910	7.72

The annual average death rate per thousand in the cities of Panama, Colon, and the Canal Zone, including both employes and nonemployes, for the month of May in previous years was, as follows:

1905	41.95
1906	43.32
1907	31.57
1908	20.87
1909	15.77
1910	18.69
1911	22.32

Segregating the whites from the blacks, the annual average death rate per thousand from disease among employes was: For whites, 5.81; blacks, 8.97, giving a general average of 8.17. For the same month during 1909, the annual average death rate per thousand from disease was: Whites, 4.03; blacks, 5.82, giving a general average of 5.36, and for the same month during 1910: Whites, 5.42; blacks, 4.55, giving a general average of 4.77.

Among employes during the month, deaths from the principal diseases were, as follows: Nephritis, acute and chronic, 5; lobar pneumonia, 6; malaria fever, 6; tuberculosis, 4; and typhoid fever, 2, leaving a balance of 10 deaths from all other diseases, and 11 deaths from external violence.

No cases of yellow fever, smallpox, or plague were brought to, or originated on the Isthmus during the month.

Respectfully,
H. F. Hodges, *Acting Chairman.*

Physical Examination of Silver Employes.

To guard against fraudulent injury claims, and to prevent the employment of men who would be peculiarly subject to injury on account of some latent disability, it has been decided to require all silver employes entering the service to appear before the nearest district physician for examination. A form of request for physical examination has been drafted, copy of which has been submitted to the heads of departments and divisions.

SOCIAL LIFE OF THE ZONE.

Church Notes.

The Methodist Episcopal Church in Panama has issued the first number of a bulletin which contains a schedule of the services to be held in the church in the current month, notes of general interest, and a brief review of the activities of the church under the two pastors, the Rev. Harry Compton, pastor of the English section, and the Rev. Charles W. Ports, pastor of the Spanish section. There will be a communion service in the church on the first Sunday in July at 10 a. m.

"Children's day" will be observed in the Gatun Sunday school on Sunday, June 25. A choir has been organized for the Union League services, composed of about twelve men and women. Mrs. Nat Johnson is the accompanist, and Mrs. Hughes the leader. E. C. Soule has resigned as superintendent of the Gatun sunday school, and H. A. Smith has been appointed in his stead. A new piano has been purchased for the chapel, the money being donated by the Sunday school and the Christian League.

Three entertainments have been held in the social hall at Pedro Miguel, under the auspices of the Pedro Miguel Song and Praise Association. The object is to maintain a fund for incidental expenses, and for the purpose of holding entertainments open to all the residents of the village. The association has made arrangements with the superintendent of the Commission clubhouses for the appearance in Pedro Miguel of the States entertainers that visit the Isthmus. A schedule of Sunday evening meetings includes the following speakers: First Sunday of the month, E. C. Soule of Gatun; second, A. H. Shrimpton of Pedro Miguel; third, the Rev. Harry Compton of Panama; fourth, the Rev. Charles W. Ports of Panama. At the Thursday evening song services, the Rev. Mr. Nellis of Empire, the Rev. Mr. Purdy of Gatun, and the Rev. Mr. Elliott of Cristobal are the speakers. The membership of the association is about 80.

The annual "Week of missions" was observed in Christ Church, Colon, from June 5 to June 11. A new feature of the observance was a nightly procession held each evening at 7:30 o'clock, when the vested clergy and the choir went in procession through the different sections of the city singing missionary hymns. The rector of Christ Church was assisted by the clergy of the Protestant Episcopal Church on the Isthmus, who delivered the addresses at the services. The week closed with a review of the work of the various missions throughout the world by the rector. The offerings for the week were devoted to missionary purposes.

Marines Minstrel Show at National Theatre.

The Camp Elliott minstrels will give their two-part show at the National Theatre in Panama on the night of July 3, for the benefit of the post exchange at Camp Elliott and the Fourth of July celebration at Cristobal. The show will consist of two parts, the olio, and the specialties; in short, it will be a minstrel show of the type of 20 years ago. The Marine band will be present to play the national airs of Panama, and the United States; and the theatre will be decorated. A special train will leave Colon for Panama at 6 o'clock in the evening, and the show will begin immediately after its arrival in Panama. Tickets will cost 50 cents for admission, 75 cents for pit seats, and $1 for box seats; and they will include transportation from any point on the line to Panama and return.

PERSONAL.

The *Army and Navy Journal* of June 10 prints the following:

"Secretary of War Stimson is planning a trip of inspection of the Panama Canal work in July, if he is able to leave Washington at that time. It will be Mr. Stimson's first visit to Panama. He is interested in the construction work there, and eagerly accepted the invitation of Col. George W. Goethals, C. E., Chairman and Chief Engineer of the Isthmian Canal Commission, who is in this country on a month's leave of absence. Secretary Stimson hopes to spend about two weeks on the Isthmus, for the purpose of familiarizing himself with the work which is under his supervision."

Col. Geo. W. Goethals sailed from the States on the *Allianca* on June 17, due to arrive at Cristobal on June 23.

Mr. Maurice H. Thatcher, with Mrs. Thatcher, returned from his leave in the States on the *Colon*, which arrived at Cristobal on June 18.

A cable message received in Panama on June 19 announced that Claude Coventry Mallet, British minister resident to Panama, had been made a Knight of St. Michael and St. George. Sir Claude has been in the consular and diplomatic service in Latin-America since 1883, and his present assignment in Panama began in 1891.

Spanish War Veterans.

A meeting of Chagres Camp, No. 2, U. S. W. V., was held at Culebra on June 10, and the following officers were installed: Commander, Frank J. Hoffman; senior vice-commander, Frank Bronson; junior vice-commander, Edmund H. Tracy; officer of the day, William W. John; officer of the guard, Okey J. Rice; adjutant, H. Wm. Coutermarsh; chaplain, A. S. Boyd; quartermaster, John Abramse. At 11:15 p. m., the meeting was adjourned and refreshments served. The next meeting of Chagres Camp will be held in the Commission lodge hall at Paraiso on June 25, at 7 p. m.

There will be a meeting of the Spanish War Veterans in the Gatun lodge hall on Sunday afternoon, June 25, at 1.30 o'clock.

Steam Shovel and Dredge Men.

The next regular meeting of Panama Local, No. 5., A. U. of S. S. and D. will be held in the Culebra lodge hall, Sunday, June 25, at 2:30 p. m.

Electrical Workers.

The members of Local Union, No. 677, I. B. E. W. of Gatun, were entertained at their last meeting on June 10, with a lecture on "Transformers," illustrated with diagrams, by Mr. E. W. Nick of Gatun. After the lecture refreshments were served.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Las Cascadas, C. Z., on Sunday, June 25, 1911, at 6 p. m. The program follows:

1	March—*The Hustler*	Alford
2	Selection—*Robin Hood*	De Koven
3	Waltz—*Skaters*	Waldteufel
4	Wooden Shoe Dance—*Dutch Kiddies*	Trinkaus
5	Overture—*Norma*	Bellini
6	Intermezzo—*Garden of Roses*	Prats
7	Selection—*Woodland*	Ludert
8	Medley—*Southern Plantation*	Conterno
9	March—*Give the Countersign*	Scouton

Oliver Kimball, *Acting Musical Director.*

The next concert will be given at the Hotel Tivoli on Sunday, July 9.

OFFICIAL CIRCULARS.

Fourth of July.

Culebra, C. Z., June 19, 1911.

Circular No. 398:

Independence Day, Tuesday, July 4, 1911, will be observed as a holiday in the Canal Zone, and, as far as practicable, all public business will be suspended on that day.

H. F. Hodges,
Acting Chairman and Chief Engineer.

Reservation of Canal Zone Lands.

Cubebra, C. Z., June 13, 1911.

Heaos of Departments and Divisions:

The Act of Congress, approved February 27, 1909, entitled, "An Act relating to the use, control, and ownership of the lands in the Canal Zone, Isthmus of Panama," provides that 'no public lands in the Canal Zone shall be leased until a statement is filed by the Isthmian Canal Commission with the Collector of Revenues, by which it shall be made to appear that it is not contemplated to use such lands in the work of Canal construction, nor to set the same aside as town sites.

In order that the Canal Commission may prepare the statement required by the Act of Congress, it will be necessary to obtain full information respecting the lands that may be needed by the departments and divisions of the Canal Commission.

I desire a statement from the respective heads of the departments and divisions as to the lands that will be needed by them in the work under their control and direction. The engineers in charge of the Atlantic, Central, and Pacific Divisions will submit statements showing the lands that may be required in their respective divisions for the construction of the Canal, and the auxiliary works in their charge, the Army and Navy reservations that may have been set aside in their respective divisions, and any other lands that may be needed for the work under their charge; also, the lands, if any, that should be set aside as town sites.

I desire that full statements be submitted respecting the lands that may be needed for lighthouses; telegraph, wireless, seismograph, and other stations.

I also desire statements respecting lands that may be needed in connection with the work of the Sanitary Department.

The Department of Civil Administration will submit statements of the lands that may be needed in any of the divisions of that department.

It is also desired that these statements be accompanied by maps and descriptions of the lands to be reserved by the respective departments and divisions, so that such lands may be easily identified and located upon the ground. The statements will be submitted to the Chairman and Chief Engineer before the 15th day of July, 1911.

H. F. Hodges,
Acting Chairman and Chief Engineer.

Promotion of Spanish Laborers.

Culebra, C. Z., June 14, 1911.

Referring to my letter of the 10th instant, wherein it is directed that the pay of European laborers be increased from 16 cents to 20 cents an hour as they complete six months' service. If the end of the six months' period falls in the middle of the month, as will usually be the case, the increase may be made to take effect on the 1st of the following month.

Respectfully,
H. F. Hooges, *Acting Chairman.*

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal and Colon during the week ending June 17:

Prinz August Wilhelm, June 12, from New York, with 500 kegs track spikes for stock.

Advance, June 13, from New York, with 84 cases drugs and sundries for Sanitary Department; 30 cases cartridges, 8 cases fire hose for Department of Civil Administration; 3 cases electrical machinery for Pacific Division; 5 pieces steel castings for Central Division; 12 bundles fittings, 65 bags stock food, 5 cases chloride of lime, 21 bundles cotton mops, 14 cases cardboard, 2 cases injectors, 6 cases rubber hose for stock; and a miscellaneous cargo, the whole consisting of 320 packages, weighing 51 tons.

Hoyle Bank, June 13, from New York, with 14,152 barrels cement for Atlantic Division; 14,152 barrels cement for Pacific Division.

Turrialba, June 15, from New Orleans, with 1 dredge dipper for Central Division; 106 barrels fire clay, 500 sacks bran for stock.

Santa Marta, June 15, from New York, with 1 bale rubber belting for Pacific Division; 2 crates manganese wheels for Mechanical Division; 7 cases electrical material, 15 bundles brooms for stock.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

The Cristobal bowling team won two out of three games on Saturday, June 17. The score follows:

Culebra.				Cristobal.			
Huttlemeier	101	81	99	Gibson	93	83	98
Conlon	87	73	78	Jacques	80	104	108
Dundas	89	89	68	Wheeler	83	83	87
Kersey	95	88	79	Bullard	77	87	92
Case	81	116	80	De Cora	91	97	91
Total	453	447	404		424	454	476

The 100, or over, duckpin scores for the week ending June 17 are, as follows: Huttlemeier, 110, 104, 102, 111, 116, 101, 101; Brown, 101, 100, 101; Case, 100, 106, 109, 116; Judge, 120; Mengel, 100; Silver, 109.

The Hill Magic Company, necromancers and illusionists, will be at the clubhouse on Thursday evening, June 22. Because of the length of program, this entertainment will begin promptly at 8 o'clock.

EMPIRE.

The following high scores were bowled in duckpins last week: Pinney, 107, 104, 118, 104; Dakin, 107; Rodeghiero, 111, 105, 102; Goolsby, 107, 112; Gustavson, 101, 103.

The Empire duckpin bowling team took two out of three games from the Gorgona team on Saturday, June 17, on the Empire alleys. The score was: Gorgona, 442, 433, 462; Empire, 458, 545, 453.

The Empire indoor baseball team won from the Cristobal team on Saturday, June 17, by the score of 34 to 9.

The weekly meeting of the Empire Literary Society will be held on Friday evening, June 23. The election of officers will take place.

GORGONA.

Gorgona won three games in bowling from Empire on Saturday night on the local alleys. The score follows:

Gorgona.				Empire.			
J. Orr	87	83	79	King	77	92	88
Sims	84	81	104	Nitneer	84	78	85
Haldeman	82	93	70	Pinney	96	84	86
Simka	83	87	92	Sawbelle	86	89	86
Haggerty	94	95	107	Rodeghiero	70	77	96
Total	430	439	452		413	420	441

Next Saturday night the Gorgona indoor baseball team will play the last game of the season, meeting Culebra on the local floor.

Sunday night, June 25, the monthly song and devotional services will be held at the clubhouse, at 7.30 o'clock. Mr. Safford of Camp Elliott will deliver the address. Mr. Glen Pierson will sing, and Mrs. Booz will play the piano.

GATUN.

A concert was given by a German orchestra on Tuesday evening, June 13.

Forty-five men listened to Dr. Reeder, specialist at Ancon Hospital, give a talk on "The eye and its care," on Sunday evening, June 18.

Two hundred men attended the "Vaudeville smoker" on Saturday evening, June 17. The program was, as follows: Selection, Marine orchestra; humorous recitations, H. A. Guerard; piano solo, Arthur Howard; boy from the Bowery, Wm. Everett; half-hour of magic, Prof. Galatas of Hill Magical Co.; comedy sketch, Richards and Robertson; the boy soprano, Eddie Walsh; baritone solo, S. F. Hull; patriotic selection, Marine orchestra; recitations, J. H. Silver; fancy roller skating, Jack Downey; tenor solo, G. Lowninghoener; facial expressions, H. A. Guerard; song, Camp Elliott quartet; finale, Marine orchestra.

CRISTOBAL.

Tuesday night the basketball game between the Sterner and Morton teams resulted in favor of the latter, 15 points to 16.

Sterner's team—Sterner, F., 2 goals, 11 foul goals' total 15 points; Thompson, F; Humphreys, C; Wetherbee, G; Cousineau, G.

Morton's team—Levy, F, 1 goal; Schlager, F, 4 goals; Morton, C, 2 goals, 2 fouls; McSparren, G; Herrington, G.

Saturday night the Culebra duckpin team failed to send a team to bowl, as scheduled, and three games were forfeited to the Cristobal team. The home team scored: 473, 434, 450.

The high duckpin scores for the week are, as follows: Orr, 109, 102; Hess, 106,116; Jacques, 103, 106, 100; Louch, 107, 112, 105, 101, 102, 101; Wheeler, 103, 103; Smith, 106, 108; Furlong, 112.

High scores in tenpins: Blackburn, 213; Furlong, 201; Russell, 201.

A class in catch-as-catch-can wrestling was organized on Monday night. This class will meet every Monday night. Instruction will be given in the various holds and breaks for a period of twelve weeks, after which, matches will be held for the championship of the class at the different weights.

An office men's gymnasium class will meet every Tuesday and Thursday at 5:30 p. m. The regular gymnasium class will meet every Tuesday and Thursday at 7:30 p. m. Men interested in physical instruction are urged to join one of the classes during the rainy season.

PORTO BELLO.

Thursday afternoon an indoor quoit tournament was held for the ladies of Porto Bello.

Nearly hald the members of the clubhouse are interested in chess. Twenty are now engaged in a handicap tournament. In the game being played by wireless with Culebra, twenty-four moves have been made, and the game is about even.

Rainfall from June 1 to June 17, 1911, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	Ins.		Ins.
Ancon	.84	6	1.52
Balboa	.74	6	1.23
*Miraflores	.87	6	1.89
Pedro Miguel	.38	6	1.70
Rio Grande	.36	10	1.87
Central Section—			
Culebra	.25	2	1.83
*Camacho	.35	11	1.70
Empire	.60	12	3.02
Gamboa	.83	9	4.05
*Juan Mina	1.05	9	4.65
Alhajuela	2.70	9	7.50
*El Vigia	3.58	9	8.04
*Gorgona	1.68	9	4.69
San Pablo	1.35	13	3.27
Tabernilla	1.22	9	3.16
Bohio	.72	9	3.03
*Monte Lirio	1.79	2	7.01
Atlantic Section—			
Gatun	2.38	1	8.48
*Brazos Brook	1.93	1	7.08
Cristobal	1.48	1	4.90
Porto Bello	1.29	5	†5.90

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

†To 5 p. m., June 16.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending June 28, 1911, (75th meridian time):

DATE.	Low.	High.	Low.	High.	Low.
	A.M.	A.M.	P.M.	P.M.	P.M.
June 22	5.22	11 26	6.00	......	......
			A.M.		
June 23	......	12.04	6.23	12.28	6.59
June 24	......	1.07	7.23	1.25	7.55
June 25	......	2.05	8.20	2.22	8.50
June 26	......	3.00	9.15	3.16	9.40
June 27	......	3.57	10.07	4.08	10.31
June 28	......	4.43	10.58	4.59	11.20

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, June 17, 1911. All heights are in feet above mean sea level.

DAY AND DATE.	STATION.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun., June 11	127.1	93.6	46.5	15.8	15.6
Mon., June 12	131.0	96.0	49.2	15.6	15.6
Tues., June 13	128.3	94.6	49.2	15.9	15.6
Wed., June 14	132.5	97.2	50.2	15.9	15.7
Thurs., June 15	129.0	95.2	50.1	16.5	16.0
Fri., June 16	127.3	93.8	47.0	16.2	16.0
Sat., June 17	126.8	93.1	46.4	16.0	15.9
Height of low water	125.0	92.0	44.0		

The following vessels arrived at or departed from the port of Balboa during the week ending June 17:

Arrivals—June 10, *San Juan*, from San Francisco; June 11, *Trinculo*, from Port Harford; June 12, *Mexico*, from Valparaiso; June 13, *Chile*, from Guayaquil; June 15, *Aztec*, from San Francisco; June 16, *Manavi*, from Buenaventura; *G. W. Fenwick*, from San Francisco.

Departures—June 10, *Peru*, to Guayaquil; *Ucayali*, to Callao; June 12, *Leelanaw*, to San Francisco; June 13, *Pennsylvania*, to San Francisco; *Acapulco*, to San Francisco; June 14, *Ecuador*, to Guayaquil; June 15, *Huasco*, to Valparaiso.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to change:

NEW YORK TO CRISTOBAL.

Allianca	P. R. R.	Saturday	June 17
Ancon	P. R. R.	Saturday	June 24
Advance	P. R. R.	Friday	June 30
Colon	P. R. R.	Friday	July 7
Allianca	P. R. R.	Thursday	July 13
Panama	P. R. R.	Wednesday	July 19
Advance	P. R. R.	Tuesday	July 25
Colon	P. R. R.	Monday	July 31
Allianca	P. R. R.	Saturday	Aug. 5
Panama	P. R. R.	Saturday	Aug. 12
Advance	P. R. R.	Friday	Aug. 18
Colon	P. R. R.	Thursday	Aug. 24
Allianca	P. R. R.	Wednesday	Aug. 30
Colon	P. R. R.	Tuesday	Sept. 5

CRISTOBAL TO NEW YORK.

Colon	P. R. R.	Saturday	June 24
Allianca	P. R. R.	Friday	June 30
Panama	P. R. R.	Thursday	July 6
Advance	P. R. R.	Wednesday	July 12
Colon	P. R. R.	Wednesday	July 19
Allianca	P. R. R.	Tuesday	July 25
Panama	P. R. R.	Monday	July 31
Advance	P. R. R.	Sunday	Ang. 6
Colon	P. R. R.	Saturday	Aug. 12
Allianca	P. R. R.	Friday	Aug. 18
Panama	P. R. R.	Thursday	Aug. 24
Advance	P. R. R.	Wednesday	Aug. 30
Panama	P R. R.	Tuesday	Sept. 5
Allianca	P. R. R.	Monday	Sept. 11

NEW YORK TO COLON.

Metapan	U. F. C.	Thursday	June 15
Prinz Joachim	H.-A.	Saturday	June 17
Zacapa	U. F. C.	Thursday	June 22
Prinz Eitel Friedrich	H.-A.	Friday	June 23
Magdalena	R. M	Saturday	June 24
Almirante	U. F. C.	Thursday	June 29
Prinz Aug. Wilhelm	H.-A.	Saturday	July 1
Santa Marta	U. F. C.	Thursday	July 6
Clyde	R. M.	Saturday	July 8
Prinz Sigismund	H.-A.	Friday	July 7
Metapan	U. F. C.	Thursday	July 13
Prinz Joachim	H.-A.	Saturday	July 15
Zacapa	U. F. C.	Thursday	July 20
Prinz Eitel Friedrich	H.-A.	Friday	July 21
Almirante	U. F. C.	Thursday	July 27

COLON TO NEW YORK.

Santa Marta	U. F. C.	Thursday	June 22
Prinz Sigismund	H.-A.	Saturday	June 24
Clyde	R. M.	Tuesday	June 27
Metapan	U. F. C.	Thursday	June 29
Prinz Joachim	H.-A.	Tuesday	July 4
Zacapa	U. F. C.	Thursday	July 6
Prinz Eitel Fredrich	H.-A.	Saturday	July 8
Atrato	R. M	Tuesday	July 11
Almirante	U. F. C.	Thursday	July 13
Prinz Aug. Wilhelm	H.-A.	Saturday	July 18
Santa Marta	U. F. C.	Thursday	July 20
Prinz Sigismund	H.-A.	Saturday	July 22
Metapan	U. F. C.	Thursday	July 27
Prinz Joachim	H.-A.	Tuesday	Aug. 1

NEW ORLEANS TO COLON.

Abangarez	U. F. C.	Saturday	June 17
Atenas	U. F. C.	Saturday	June 24
Turrialba	U. F. C.	Saturday	July 1
Abangarez	U. F. C.	Saturday	July 8
Atenas	U. F. C.	Saturday	July 15
Turrialba	U. F. C.	Saturday	July 22

COLON TO NEW ORLEANS.

Turrialba	U. F. C.	Thursday	June 22
Abangarez	U. F. C.	Thursday	June 29
Atenas	U. F. C.	Thursday	July 6
Turrialba	U. F. C.	Thursday	July 13
Abangarez	U. F. C.	Thursday	July 20
Atenas	U. F. C.	Thursday	July 27

The Hamburg-American steamers leave Colon for New York via Kingston at 10 a. m. on sailing dates. The *Prinz August Wilhelm* and *Prinz Joachim* call at Santiago, Cuba, on both outward and homeward voyages.

The Leyland line steamer *Louisianian* sails for Tampa, Fla., via Port Limon, on or about Sunday, June 25.

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships for New York via Kingston on Thursday at 11 a. m.: for Bocas del Toro on Monday at 6 p. m.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, JUNE 28, 1911. No. 44.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

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Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Fuel Oil.

The Union Oil Company delivered 74,929 barrels of fuel oil to the Commission in May, the largest monthly delivery yet made. This amount, however, is only a little in excess of the February deliveries, which amounted to 72,939 barrels, the greatest amount pumped into the Commission tanks in any one month up to that time. The point of greatest increase in the oil takings for May was Gatun, where the deliveries amounted to over 18,000 barrels.

Three tank vessels are now engaged in bringing fuel oil to the Isthmus from the California fields, the *Pectan*, of 62,000 barrels capacity, and the *Oberon* and *Trinculo*, each of 45,000 barrels capacity. Two cargoes are received, on an average, each month. Most of the oil is delivered to the tank steamers from the company's storage tanks at Port Harford, but a small quantity has been shipped from Oleum, another of the company's oil ports.

The oil company has removed a part of its transisthmian pipe line to the Panama railroad relocation, and the remainder will be transferred as soon as the railroad work is far enough along. At Caimito the pipe line crosses over to a point on the present operated road, near Barbacoas bridge, a distance of about 7,000 feet. Another crossover is made from the old and new lines of railroad near the Miraflores power house, the relaid oil line following the railroad relocation from a point south of the tunnel to Paraiso Junction. The company is using some of its old pipe in this work, but much of the material is new.

Fire Protection Measures.

A 10-inch pipe has been laid from the 20-inch Rio Grande main to the high pressure reservoir on Ancon hill. It is intended for use in case of fire in Ancon, or in the city of Panama, when there is an unusual demand on the water supply in the reservoir.

Upon recommendation of the Chief of the Canal Zone Fire Department and the Superintendent of Public Works, approved by the Chairman and Chief Engineer, a chart will be prepared in the drafting office of the Pacific Division for the use of the Panama authorities, which will show the water system of the city of Panama in colors, together with the number of hose connections which may be made in the various districts of the city on the various mains. In addition, the location of all hydrants will be indicated in order that the Panama firemen may be able to make proper connections in time of fire.

Concrete Ditching.

Permanent concrete drains are being laid along the beds of small ravines and gullies at Empire, which, in the rainy season, serve to carry off storm water. A total of about 9,000 feet of concrete drainage ditch will be constructed, the work involving excavating and straightening the natural bed of the watercourses to established lines and grades, the building of suitable culverts where roads cross them, and placing concrete in the drains. This work is confined to the section in which the American quarters are situated, and is a sanitary measure, as it will obviate the necessity of removing obstructions which are constantly washing into the ditches, including dirt from cave-ins, and, in addition, will reduce the amount of grass cutting to be done. Similar ditches have been constructed at Las Cascadas, and a system of permanent drains will probably be installed at Gatun during the next dry season.

Erosion of Slopes of Culebra Cut.

Arrangements have been made to sow various kinds of grass seeds on the slopes of Culebra Cut, with a view to reducing erosion. The seed has arrived and will be planted under the direction of Mr. H. Pittier, a botanist from the Smithsonian Institution.

Canal Zone Road Building.

The concrete wagon bridge over the Mandingo River, near Bas Obispo, was completed and thrown open to traffic shortly after June 1. This terminates construction work, as far as has been planned on the wagon road, extending north and south through the Canal Zone, from Panama to Gorgona, a distance of 19.7 miles. The highway lies to the east of and parallels the Panama railroad from Panama to Pedro Miguel. Here, it crosses to the west side of the railroad relocation, and, near Paraiso Junction, crosses over again to the east side. It extends back of Gold Hill, and approaches the east bank of the Cut between Culebra and Empire, where slides have recently encroached on the right-of-way. From Empire to Gorgona, the road lies to the west of and follows the double track line of the Panama railroad. With the exception of a few hundred yards at Pedro Miguel, the road is above the proposed summit level of the water in the Gatun and Miraflores lake regions. No extension of this road to bridge the gap between Gorgona and Gatun is at present contemplated. The widths and lengths of the various sections of the road are, as follows:

SECTION.	WIDTH.	LENGTH.
	Feet.	*Feet.*
Panama to Corozal	16	17,100
Corozal to Cardenas River	16	9,020
Cardenas River to Pedro Miguel	18	18,000
Pedro Miguel to Paraiso	14	5,713
Paraiso to Empire	12	18,800
Empire to Las Cascadas	14	11,900
Las Cascadas to Mandingo River	12	6,350
Mandingo River to Gorgona	12	16,810
Total		103,693

The Marine Corps at Camp Elliott is engaged in building a road to connect the camp with the main highway. It begins at the railroad station at Bas Obispo, crosses the Mandingo River on a bridge, supported by 60-pound French and 70-pound American iron rail and joins the Zone road a short distance away. The labor and $150 worth of material are furnished by the Marine Corps, and material to the value of not to exceed $200 is to be paid for out of Canal Zone funds.

The new Empire-Chorrera road has been graded for a distance of about a mile and one-half out of Empire. The heaviest construction on the entire route is probably at the Empire end, where the roadbed has been excavated from the side of a steep hill to get over the ridge. In surmounting this ridge, the original plans provided for a six per cent grade, but to secure this grade required the building of 4,500 feet additional roadbed. It was therefore determined to shorten the route this much, the higher line adopted increasing the grade only two per cent. The old Chorrera trail enters Empire directly west of the town; the new road joins one of the streets of the settlement further to the south, and nearer the railroad. In excavating the roadbed out of the hillside, a thin layer formation of loose trap rock was encountered, requiring very little breaking up, which is being used advantageously in making the outside embankment fill on the steep hill slope, and in a rubble fill in sections where the road is over clayey ground. The method employed in making the rubble fill is to remove the earth from the roadbed, after the grading has been done for a width of 16 feet, the excavation thus formed being filled in on the sides to a depth of 10 inches, raised toward the center to form a 6-inch crown, with large pieces of rock. The material is transported to the point desired in Decauville cars, and the rubble fill will be continued until the road is extended too far from the rock supply.

The new road follows the high, well drained land of the ridges, rather than the route of the old trail, which, for much of its distance, extends over low land, boggy, and at times al-

NOTES OF PROGRESS.

(*Continued.*)

most impassable in the rainy season. Only onestream of importance is to be crossed, and, with the possible exception of this, the Mandingo River, no bridges will be required, although there are many culverts to be built. A stockade, constructed from native materials, such as thatch and cane, and surrounded by a barb wire fence, will be located at the Mandingo River crossing about midway between the Zone boundary line and Empire, in which the convicts employed in building the road will be housed. A survey is proposed for a branch road to Arraijan, and, in case it is decided to build it, the stockade will be useful, as the road will join the main line nearby.

Hostling Locomotives.

A statement of the cost of hostling locomotives at the various engine houses during March, follows:

Pedro Miguel—2,082 locomotives, 62 cranes, 124 others; unit cost $1.09.

Las Cascadas—1,628 locomotives, 60 cranes; unit cost $1.112.

Gorgona—705 locomotives, 297 cranes; unit cost $1.14.

Gamboa—607 locomotives, 1 crane, 123 others; unit cost $1.23.

Balboa—363 locomotives, 124 others; unit cost $1.29.

Caimito—200 locomotives, 30 cranes; unit cost $1.95.

Rio Grande—110 locomotives; unit cost $3.08.

Gatun Dam Spillway.

The concrete work in the spillway of Gatun Dam is about 63 per cent completed, 141,493 cubic yards, out of a total of 225,000, having been placed at the close of work on June 24. A statement of the amount laid each working day last week, and of the total in place, follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
June 19	176	7:30	2
June 20	226	8:00	2
June 21	150	7:00	1
June 22	110	4:30	1
June 23	60	3:30	1
June 24	128	6:00	1
Total	850	36:30	1.33
Previously reported	140,643	....	....
Grand total	141,493		

Tug Service to Porto Bello, Nombre de Dios, and Toro Point.

Effective June 26, the following schedule will be maintained between Dock 13, Cristobal, Nombre de Dios, Porto Bello, and Toro Point.:

Tug *Reliance* will leave Dock 13 daily, except Sundays, at 7 a. m., with two barges for Nombre de Dios, returning at once with two barges to Gatun.

Tug *Mariner* will leave Dock 13 daily, except Sundays, at 9 a. m., with three barges for Porto Bello, returning to Gatun as soon as barges are loaded

Tug *Porto Bello* will leave Dock 13 Saturdays at 9 a. m., light, for Porto Bello. This tug will leave Porto Bello, light, at 2 p. m., arriving at Dock 4, Colon, in time for passengers to catch train No. 7, leaving Colon at 4.35 p. m.

Tug *Porto Bello* will leave Dock 13 Sundays at 7 p. m., for Porto Bello, returning at once.

Tug *Mariner* will leave Dock 13 daily, except Sundays, at 6.30 a. m., for Toro Point, returning at once.

Tug *Mariner* will leave Dock 13 Sundays at 9.30 a. m., for Toro Point, returning at once.

A tug will leave Dock 13 on Wednesdays, Saturdays, and Sundays, at 4.30 p. m., for Toro Point, returning at 5.30 p. m.

A tug will leave Dock 13 on the 20th of each month at 6 a. m , for Porto Bello and Nombre de Dios, returning to arrive at Dock 4, Colon, about 4.30 p. m.

CONCRETE WORK IN THE LOCKS.

Over 55 per cent of the concrete for all the locks is in place, the amount at the close of work on June 24 being 2,361,638¾ cubic yards, out of a total of approximately 4,284,400. A total of 23,587¼ cubic yards of concrete was laid in the locks during the week ending June 24.

GATUN LOCKS.

About 68 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of work on June 24, being 1,414,382¾ cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending June 24, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 6 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
June 19	832	14:31	7	572	8:40	2	89	1,493
June 20	1,416	23:24	7	538	8:40	2	171¼	2,125¼
June 21	1,594	22:50	5	710	8:40	2	166½	2,470½
June 22	1,294	21:11	5	....	....	......	24½	1,318½
June 23	870	16:11	3	552	8:40	2	264¾	1,686¾
June 24	1,350	22:22	5	544	8:22	2	107¾	2,001¾
*Portable mixers	....	....	......	288½	....	......	....	288½
Total	7,356	120:29	5.33	3,204½	41:22	2	823¾	11,384¼
Previously reported	....	....	......	....	....	......	....	1,402,998½
Grand total	....	....	......	....	....	......	....	1,414,382¾

*The 288½ yards shown for the portable mixers are reenforced concrete, and were placed on the following days: June 19th, 40; June 20th, 66; June 21st, 33; June 23d, 69½; June 24th, 80.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is over 80 per cent completed, 670,052 cubic yards, out of a total of 837,400, having been placed at the close of work on June 24. The record for each of the six eight-hour working days of last week, follows:

DATE.	AUXILIARY PLANT.						Large stone.	Total
	2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
June 19	478	11:00	2	....	....	......	....	478
June 20	904	18:00	3	....	....	......	8	912
June 21	704	16:00	3	....	....	......	....	704
June 22	384	12:00	2	....	....	......	....	384
June 23	922	18:00	3	....	....	......	....	922
June 24	886	22:50	4	....	....	......	....	886
Total	4,278	97:50	2.83	....	....	......	8	4,286
Previously reported	....	....	......	....	....	......	4,392	665,766
Grand total	....	....	......	....	....	......	4,400	670,052

MIRAFLORES LOCKS.

Over 20 per cent of the concrete for the system of two twin locks at Miraflores was in place on June 24, the total amount on that date being 277,204 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT.							Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
June 19	1,058	22:30	4	....	....	......	412	20:00	3	....	1,470
June 20	1,070	20:60	4	....	....	......	355	19:00	3	....	1,425
June 21	1,200	25:67	4	....	....	......	340	16:50	3	....	1,540
June 22	494	13:50	4	....	....	......	80	4:00	1	....	574
June 23	1,082	24:67	4	....	....	......	213	11:00	3	....	1,295
June 24	1,248	28:43	4	....	....	......	365	22:50	4	....	1,613
Total	6.152	135:17	4	....	....	......	1,765	93:00	2.83	....	7,917
Previously reported	....	....	......	....	....	......	....	....	......	3,693	269,287
Grand total	....	....	......	....	....	......	....	....	......	3,693	277,204

ORDINANCE

Providing for the Licensing of Chauffeurs for Automobiles.

Be it enacted by the Isthmian Canal Commission, as follows:

Section 1. That hereafter it shall be unlawful for any person to operate over the streets and roads of the Canal Zone any automobile without first having obtained a license as chauffeur as in this ordinance provided.

Section 2. Each person desiring to operate any automobile over the streets and roads of the Canal Zone shall first make written application to the Board of Local Inspectors of the Canal Zone, stating his nationality, age, and character of experience in the operation of automobiles, and gasoline, and electric machinery; and shall also have his application endorsed by two reputable citizens of the Canal Zone, or of the cities of Colon or Panama, Republic of Panama, vouching for his sobriety and trustworthiness. The Board of Local Inspectors shall thereupon examine the applicant touching his knowledge of gasoline and electrical motors and machinery, and of the mechanism and operation of automobiles, as well as upon his knowledge of the English or Spanish language, and upon laws and regulations of the Canal Zone relating to the operation of automobiles over the streets and roads of the Canal Zone. In order to determine the skill of any applicant, said Board may require him to make a practical demonstration thereof.

Section 3. No person shall be granted a chauffeur's license unless he is not less than eighteen years of age, is of sober habits, is able to read either the English or Spanish language, and shall prove to the satisfaction of the Board of Local Inspectors that he has the knowledge, skill, and judgment necessary for the safe and skilful driving and handling of automobiles.

Section 4. The Board of Local Inspectors shall meet at Ancon, Cristobal, or at such other points in the Canal Zone as it may designate, at such times as may be convenient to it, and shall examine applicants for licenses hereunder; and the Board shall keep a careful record of all such applications, and of its action thereon, together with any papers submitted in connection with such applications and examinations.

Section 5. Upon the completion of an examination, as herein provided for, the Board of Local Inspectors shall make a report to the Head of the Department of Civil Administration, showing whether the applicant is competent under the provisions of this ordinance to operate automobiles over Canal Zone streets and roads, and if the Board's recommendation is to the effect that the applicant is thus competent, the Head of the Department of Civil Administration shall thereupon issue to the applicant a license in form, substantially, as follows:

THE GOVERNMENT OF THE CANAL ZONE.

License to Chauffeurs.

No.........

Whereas, it has been reported to me by the Board of Local Inspectors that............ has given satisfactory evidence to said Board that he is a skilful chauffeur or operator of automobiles, and can be entrusted to perform the duties of chauffeur upon the streets and roads of the Canal Zone, he is, therefore, licensed to act as such chauffeur until such time as this license may, for cause, be revoked.

Witness my hand and seal this.......... day of..........19..

....

Head of Department of Civil Administration.

Countersigned:

....

Chairman, Board of Local Inspectors.

Section 6. Coincident with the issuance of any chauffeur's license, the Collector of Revenues, upon the direction of the Head of the Department of Civil Administration, shall deliver to the licensee a metal check or badge having stamped thereon the serial number of the licensee's license, and the words and letters "Chauffeur's license, C. Z." It shall be the duty of each person holding such chauffeur's license to wear or carry with him said check or badge when he is driving any automobile over Canal Zone streets or roads. For such badge and license, each such licensee shall pay to the Collector of Revenues one dollar ($1), same to become a part of the revenues of the Canal Zone Government. Upon the request of any Canal Zone police officer, any such licensee, while in charge of any automobile on Canal Zone streets or roads, shall exhibit such badge.

Section 7. The said chauffeur's license shall continue in force until it may be revoked for cause, as herein provided for.

Section 8. The Head of the Department of Civil Administration is hereby given the right to revoke any license hereunder issued when it shall appear to him that the holder thereof, because of drunkenness or lack of skill in operating automobiles, should not be further entrusted with the operation of automobiles over Canal Zone streets and roads.

Section 9. The term "Automobile," as herein used, shall apply to all vehicles of automobile, or similar, construction and operation.

Section 10. Any person who operates an automobile over the streets and roads of the Canal Zone without first having obtained a license as herein provided for, and without complying with any other requirements of this ordinance applicable to him, shall be guilty of a misdemeanor, and upon conviction thereof, shall be subject to a fine of not less than $25; and upon any subsequent conviction may, in addition to having such fine adjudged against him, be confined in the district jail for a period not to exceed thirty (30) days.

Enacted by the Isthmian Canal Commission at its one hundred and sixtieth meeting, April 15, 1911.
Approved by the Secretary of War, April 26, 1911.

Ancon Crusher.

A statement of the rock crushed at Ancon quarry, by days, during the week ending June 17, follows:

DATE.	Hours worked.	Cubic Yards.
June 12	3:10	1,549
June 13	6:55	2,277
June 14	6:25	2,210
June 15	6:15	1,980
June 16	6:45	2,128
June 17	7:15	2,891
Total	36:45	13,035

At a recent meeting of the Board of Governors of the Colon Club it was decided to discontinue dances during July and August. The next dance will, therefore, be held on the first Saturday in September.

EXECUTIVE ORDER.

Distillation Tax Effective August 13.

By virtue of the authority vested in me, the Order of May 13, 1911, providing for the collection of a distillation tax in the Canal Zone, is hereby amended so as to be effective August 13, 1911.

WM. H. TAFT.

THE WHITE HOUSE,
June 12, 1911.

[No. 1372.]

Unauthorized Subscription for K. of P.

To Whom it May Concern:

Subscription lists are being circulated in the Canal Zone purporting to be under the auspices of the order of Knights of Pythias and another organization.

Members of the order, and the public generally, are hereby advised that no subscription lists under the auspices of the Knights of Pythias have been authorized by competent authority, and any such lists bearing the name of the order do so illegally.

All concerned will govern themselves accordingly.

A. M. WARNER,
District Deputy Supreme Chancellor.

LAS CASCADAS, June 24, 1911.

Pilots, Masters, Mates, and Engineers.

A meeting of the Board of Local Inspectors will be held on Wednesday, July 5, at 8 a. m., at the Administration Building, Ancon, at which time applicants for licenses as pilots, masters, mates, or engineers, who have submitted applications on the prescribed form, may appear for examination.

Missing Men.

The American Legation in Panama requests information regarding the whereabouts of William McCulloch, employed on the Canal work until March 25, 1910, and Guy L. Disler of Lansing, Mich., who has not been heard from since October, 1910.

Information is requested by the American consulate in Panama regarding the whereabouts of Joseph H. F. Smith of Brooklyn, employed as a boilermaker at Gorgona shops up to April 15, 1911.

Any one having information regarding the whereabouts of Geo. Barlow, who left the service of the Isthmian Canal Commission in 1907, is requested to communicate with THE CANAL RECORD.

Any one having information regarding the whereabouts of William McFarland, who is supposed to be on the Isthmus, is requested to communicate with Dan. St. Clair, Gatun.

Porto Bello Crusher.

A statement of the work done at the Porto Bello crusher, by days, for the two weeks ending June 24, follows:

DATE.	Hours worked.	Cubic Yards.
June 12	5:37	2,734
June 13	5:28	2,597
June 14	5:05	2,486
June 15	4:08	2,055
June 16	5:43	2,581
June 17	5:56	2,703
Total	31:57	15,156

DATE.	Hours worked.	Cubic Yards.
June 19	4:37	2,153
June 20	4:47	2,024
June 21	3:30	1,639
June 22	4:46	1,984
June 23	4:15	1,928
June 24	4:40	2,251
Total	26:35	11,979

SOCIAL LIFE OF THE ZONE.

Church Notes.

A series of free lectures for the people of Colon are in progress in the schoolroom of Christ Church parochial school. At the first lecture, the speakers were the Rev. Edward J. Cooper, and Dr. M. E. Connor, health officer in Colon and Cristobal, who spoke on tuberculosis, the nature of the disease, preventive measures to be used, and the care of those already affected. The lantern slides, which were to be shown in connection with this lecture, were not exhibited, owing to the lack of electric current sufficiently strong for the lamp. It has been arranged, however, to have the current supplied from the Canal Commission wires, and in future, these educational lectures will be illustrated. They will be given monthly in the schoolroom at the corner of Cash and D streets. The date set for the second series of lectures is June 29. Dr. M. E. Conner will be one of the speakers, and there will be a program of music in addition to the addresses.

The dime savings bank in connection with Christ Church, Colon, has 200 depositors, and the funds in the bank have reached the sum of $750. Deposits are made in sums from one cent to one dollar. The object of the institution is to encourage thrift among the West Indian people. The bank has been opened about six months.

There will be a special service at Christ Church, Colon, on July 4, at 9 a. m., at which time the rector, the Rev. E. J. Cooper, will deliver an address.

Anti-Cigarette League Anniversary.

The senior section of the Boys' Anti-Cigarette League, Gorgona, celebrated its second anniversary at the home of the section superintendent, Mrs. A. L. Hackenberg, on Wednesday evening, June 21. A program was given, consisting of songs and quartets by LaRock, Otis, Ward, Burns, and Henter; a violin solo by Henter; a recitation by Grow; selections by the league orchestra, and choruses.

High School Commencement.

On Sunday, June 25, exercises in connection with the first commencement of the Canal Zone high school were held in the Commission clubhouse, Gatun, when Chief Justice Gudger, of the Canal Zone Supreme Court, delivered an address to the graduates. Others taking part in the exercises were the Rev. Mr. Purdy, Commission chaplain, and the choir of the Gatun Christian League. The commencement exercises will be held in the clubhouse on Friday evening, June 30, at 8 o'clock. The program is, as follows: Selection by orchestra; chorus, "Oh, Italia, Italia, beloved," by the high school; selection by orchestra; address by Mr. Maurice H. Thatcher; Selection by orchestra; history thesis by Miss B. Marguerite Stevens; violin solo by Miss Maria Elise Johnson; quartet by high school girls; presentation of diplomas by the principal of the high school, Mr. C. C. Carr; music by the school, accompanied by the orchestra.

The graduates are Miss Blanche Marguerite Stevens of Gorgona, and Miss Maria Elise Johnson of Gatun, the latter having completed her four years' work in the school.

There are 50 students in the high school. The junior class has eight members. In order to accommodate a small number of students at the Pacific end of the line, a freshman class was opened in the Ancon school in 1910. The class will pass to the Gatun school in October.

The spring number of *The Zonian*, the high school paper, has been received, and is on sale in the Canal Zone, Colon, and Panama.

A special train for the commencement exercises will leave Panama at 6 o'clock, and returning, will leave Gatun at 10.30 p. m.

Marine Minstrel Show on July 3.

A special train will be run on the night of July 3 to carry people from along the line of the Canal to the minstrel show, which the men of the Marine Corps, stationed at Camp Elliott, will give at the National Theatre in Panama. Tickets to the show will be good for transportation on this train. The schedule follows:

Leave	P. M.	Leave	P. M.
Colon	6.00	Bas Obispo	7.14
Mount Hope	6.05	Las Cascadas	7.20
Mindi	6.10	Empire	7.25
Gatun	6.18	Culebra	7.30
Bohio	6.36	Paraiso Junction	7.39
Frijoles	6.42	Pedro Miguel	7.41
Tabernilla	6.48	Miraflores	7.46
San Pablo	6.53	Corozal	7.53
Gorgona	7.04	Camp Diablo	7.55
Matachin	7.09	Panama (Arrive)	8.00

Returning, the special train will leave Panama thirty minutes after last curtain fall of the show.

Steam Shovel Men's Ball.

A benefit ball will be given by the Associated Union of Steam Shovel Men on July 1, 1911, at the Tivoli Hotel. A special train will leave Colon at 6.15, making regular stops. The return trip will be made on the passenger train scheduled to leave Panama at 12.01 a. m., July 2.

Public Installation and Dance of K. of P.

On Monday evening, July 3, Balboa Lodge, No. 4, Knights of Pythias of Las Cascadas, will hold a public installation of officers in the Commission lodge hall. Following the installation ceremonies, there will be an entertainment and dance. All Pythians, their families and friends are invited to attend. The committees are: Arrangements—J. M Wilkins, Jr., H. P. Williams, John A. Mitchell. Refreshments—David U. Scribner, J. H. Hughes, J. E. Martin.

Rifle Match.

A match at the Gamboa rifle range on June 18, between the Canal Zone Rifle Club, and the Marine Corps, was won by the former, by the following score:

CANAL ZONE RIFLE TEAM.

	200 Yds.	300 Yds.	500 Yds.	600 Yds.	Total.
Kane	43	44	48	45	180
Walraven	43	43	46	45	177
Gill	42	43	45	44	174
Blaisdell	42	42	44	45	173
Total					704

U. S. MARINE TEAM.

	200 Yds.	300 Yds.	500 Yds.	600 Yds.	Total.
Bleicher	43	42	44	45	174
Brong	41	40	42	44	172
Meginess	42	41	42	45	170
Descer	40	42	40	46	168
Total					684

Lawn Tennis.

The singles tournament preliminary to the Fourth of July tournament was held June 25 on courts of the Ancon, Tivoli, and Panama clubs. There were thirty-six entries, making this the greatest tournament in singles ever held in the Zone. Mr. Fechtig of Tivoli club won through the semifinals. Dr. Ross of Ancon, and Mr. Tupper of Culebra, who won through the third round, will play the semifinals on July 2, and the winner will play Mr. Fechtig in the finals at Cristobal on July 4. An interesting match is expected. The doubles preliminary to the Fourth of July will be held on July 2 on courts of Panama and Tivoli clubs.

Physical Examination of Silver Employes.

It has been determined, upon further consideration, that the inconveniences which would result from the physical examination of silver employes outweigh the advantages. The proposed system of examination will, consequently, be abandoned.

PERSONAL.

Major Edgar Jadwin, Corps of Engineers, U. S. A., resident engineer at Cristobal, left on the *Turrialba* on June 22 for the States. At the expiration of his leave of absence he will be assigned to duty there.

Captain Horton W. Stickle, Corps of Engineers, U. S. A., assistant engineer at Porto Bello, accompanied by Mrs. Stickle, will leave for the States on the *Abangarez* on June 29. Upon the expiration of his leave he will take charge of the U. S. engineer work at Wilmington, N. C.

Among the passengers on the *Allianca*, which arrived at Cristobal on June 23, were Quartermaster General, U. S. A., James B. Aleshire and family, Mrs. Geo. W. Goethals, and Captain Geo. B. Pillsbury, Engineer Corps, U. S. A.

Misdirected Letters.

ANCON, C. Z., June 29, 1911.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received in the office of the Director of Posts, and may be secured upon request of the addressee:

Albrecht, Pearl
Albright, Myron
Bailey, Augustus
Blake, Wilmoth
Brady, Herman G.
Bridges, Will A.
Burrow, J. O.
Campbell, Clyde
Chase, James J.
Cohen, Joshua
Conine, Jesse
Coomesty, L. D.
Corbin, Frank
Courter, G.
Cressey, Fred
Dalton, B. B.
Donaldson, W. J.
Doughterty, James
Durley, Walter
Fure, C. A. Dr.
Ginsberg & Berenson
Gayer, Mrs. W. C.
Goms, John
Gorman, Mrs. Daisy
Graub, Mary
Grimes, Lieut.
Henderson, David
Hill, H. N.
Hoyle, Hy. M.
Jacobs, Samuel
Joshua, Manasseh
Kemp, John
King, O.
Klosson, H. A.
Maddix, James T.
Monaghan, Mrs. H.
Morrison, C. H.
Nee, P. J.
Olesen, Andrew
Osborne, C.
Pemberton, James R.
Rivers, Robert
Rowland, Walter
Shaw, A.
Smith, J. Boyd
Snell, L. O.
Stub, John
Sullivan, James A.
Turner, W. A.
Varlin, C. G.
Waters, Thomas
White, Bessie B.
Wilson, Harriett E.
Wilson, Hiram
Wilson, W. T.
Worrell, Oreleah

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending July 5, 1911, (75th meridian time):

DATE.	Low.	High.	Low.	High.	Low.
	A.M.	A.M.	A.M.	P.M.	
June 29	......	5.33	11.50	5.50	......
			P.M.		
June 30	12.10	6.22	12.40	6.41	......
July 1	1.02	7.13	1.33	7.33	......
July 2	1.53	8.05	2.28	8.27	......
July 3	2.48	9.00	3.25	9.27	......
July 4	3.46	9.57	4.24	10.31	......
July 5	4.45	10.55	5.27	11.40	......

FOUND—Opposite the Division Engineer's office at Corozal, one pair of gold rimmed eye glasses. Owner should apply to Mr. F. Rawley, Corozal.

CANAL LEGISLATION.

Bills Introduced Providing for Operation of Canal and the Government of the Zone.

Two bills have been introduced in the House of Representatives providing for the operation of the Panama Canal, and for other purposes. One of them (H. R. 8664) was introduced on May 4 by Representative Mann of the minority, and the second (H. R. 11587) on June 13 by Mr. Adamson, chairman of the committee on Interstate and Foreign Commerce.

The bill introduced by Mr. Mann provides for tolls for the use of the Canal to be based upon registered, displacement, cargo, or other tonnage, not to exceed one dollar and fifty cents per net ton, based upon registered tonnage, nor be less (other than for vessels of the United States or its citizens, and vessels of the Republic of Panama) than fifty cents per net ton. It is provided

"That in fixing the charges for the use of the Canal, the President may prescribe that any vessel engaged in the coastwise trade of the United States, which is owned in whole or in part by any railroad company, or which is owned by any company the stock of which is owned in whole or in part by any railroad company, or which is controlled directly or indirectly by any railroad company, shall pay the highest charges prescribed for any vessel, and that the determination of the question of fact in each case shall be made in such manner, and by such person or persons, as the President may, by general or specific order, require: *And provided further*, That the foregoing proviso shall not apply to the Panama Railroad Company or vessels owned by it."

The measure proposed by Mr. Adamson provides for a maximum charge of $1.25 per ton, based upon registered tonnage, and provides further:

"That any vessel owned in whole or in part by any railroad company, or by any company the stock of which is owned in whole or in part by any railroad company, or which is controlled directly or indirectly by any railroad company, or has any director in common with any railroad company, shall pay double the usual charges prescribed for any vessel, and that the determination of the question of fact in each case shall be made in such manner, and by such person or persons, as the President may by order direct: *Provided further*, That the foregoing proviso shall not apply to the Panama Railroad Company or vessels owned by it: *Provided further*, That, under regulations prescribed by the President, a vessel without cargo paying toll going through the Canal shall, on its return trip through the Canal, laden with cargo, be entitled to receive a rebate of fifty per centum of the tolls just previously paid going through in the opposite direction without cargo."

Both of the bills contain provisions for the establishment and maintenance by the Government of drydocks, repair shops, yards, docks, wharves, warehouses, storehouses, and other necessary appurtenances for the purpose of supplying coal and other materials, labor, repairs, and supplies to passing vessels. The Adamson bill also provides:

"That the President is hereby authorized to acquire by purchase as rapidly as possible at reasonable prices, the title and rights of private landholders and owners of private lands in the Canal Zone, so as to extinguish all private and individual title and rights and claims to land as far as possible in the Zone, and vest in the United States, for Canal purposes, all the land comprised in the Canal Zone."

Mr. Mann has also introduced a bill (H. R 8663) providing for the government of the Canal Zone, and the construction and operation of the Canal under a director to be appointed by the President with the consent of the Senate, and to be removable by the President at his pleasure. It also provides that the judicial power in the Canal Zone be vested in a circuit court under the Supreme Court of the United States; that a trial by jury be given in all cases where a felony is charged, and that the extradition laws and treaties of the United States be extended to the Canal Zone. The provision for tolls is also made a part of this bill.

Canal Medal List Corrections.

The following corrections and changes have been made in the third service, or 1910, Canal medal and bar lists:

I. C. C. MEDAL LIST—1908.

Kirby, Edward, January 1, change to Weber, Edwin L.
Foust, Samuel M., February 5, omit, appears under March 5.
Hauschild, Fernand, W. F., March 1, add to list
Howard, George E. L., March 3, omit from list.
Giles, Jessie H., March 14, change to Giles, Jesse H.
McKeever, Barnard E., March 14, change to McKeever, Bernard E.
Kelley, Martin J., April 3, change to Kelly, Martin J.
Frahn, August, April 22, change to Frahm, August.
Dickinson, Thomas, May 13, add to list.
Moore, Charles G., May 16, add to list.
Macfarlane, James, May 19, add to list.
Clayborn, Norl C., June 7, change to Claybourn, Noel C., June 2.
Cornwell, Varney T., June 12, change to March 3.
Allen, Sydney G., June 19, change to Allen, Sidney G.
Goddum, William, July 7, change to Gaddum, William J.
Coit, John J., July 11, change to Thull, Paul J.
Mullane, Dennis E., July 18, change to Mullane, Denis E.
Polson, Thomas, August 1, change to March 3.
Balling, Frank J., August 17, omit from list.
Gage, Genevieve, August 17, change to April 27.
Hodges, Hugh F., August 17, change to Hodges, Hugh H.
Keppell, Marian J., August 18, change to Keppell, Marion J.
O'Neil, John J., September 2, change to O'Neill, John J.
Speicher, Maude L., September 2, add to list.
Thompson, Drayton, September 2, add to list.
Walling, Loring A., September 15, change to Walling, Loren A.
Sapusnik, Leon, September 17, add to list.
Covelski, Joseph P., September 18, change to Coveleski, Joseph P.
Patheier, John A., September 29, add to list.
Bliss, Gertrude, October 1, change to Hoffman, Gertrude B.
Scheitzer, William F., October 11, change to Scheltzer, William F.
Olson, Edvart J., October 28, change to Olsen, Edvart J.
Eggleston, J. Allan, November 4, add to list.
Voight, Albert D., December 3, change to Voigt, Albert D.

I. C. C. BAR LIST—1910—(FIRST.)

Anger, George F., February 11, omit from list.
Smith, Peter, February 24, omit from list.
Hofman, Otto W., March 22, change to Hofmann, Otto W.
Reeder, Dennis F., April 8, change to Reeder, Dinnis F.
Payne, Burd F., May 21, change to Payne, Burd W.
Drennan, Nelle, September 17, omit from list.
Bryant, Edward J., December 5, omit from list.

I. C. C. BAR LIST—1910—(SECOND.)

Tenny, Mark W., June 2, change to June 8.
Rerdell, M. C., August 9, change to August 16.
Leonard, Harry, October 17, omit from list.

P. R. R. MEDAL LIST.

Gross, J. J., January 13, change to Gross, T. J.
Beverly, May, March 1, change to Beverley, May.
Pierce, E. F., May 24, change to Peirce, E. F.
Pierce, R. T. B., May 24, change to Peirce, R. T. B.
Britten, Cyrus C., October 13, add to list.
Akins, C. C., November 21, change to February 3.

In the bar list published in THE CANAL RECORD of May 3, twelve names were printed with the date of service as May, instead of June. These should be: Randall, Ortez G.; Underhill, Percy H.; Wolverton, David R.; Wuerz, Robert; Young, Thomas H.—June 9; Leonard McLean—June 13; Matthew Wilson.—June 14; Gorham, Frederick L.; Jury, Frank J.; Loulan, James A.; Richmond, John; Robinson, R. R.—June 15.

Spanish War Veterans.

A special recruiting meeting of Chagres Camp, No. 2, United Spanish War Veterans, will be held in the I. C. C. lodge hall at Gorgona, C. Z., July 2, at 5.30 p. m.

Postal Business and Canal Zone Revenues.

The report of the Director of Posts for the month of May shows that 16,564 money orders were issued, amounting to $390,330.20. Of this amount $292,031.59 was issued payable in the United States, $97,895.91 in the Canal Zone, $355.70 in Martinique, and $47 in Costa Rica. The fees collected amounted to $1,757.63, and the amont of orders paid and repaid was $119,774.58.

Postal sales during the month amounted to $6,255.78, and newspaper postage to 45 cents.

The revenue collections for the month were, as follows:

Distillation licenses	$343.25
Insurance companies' fees	.71
Motor vehicle licenses	48.00
Taxes, licenses, etc.	9,969.05
Miscellaneous collections	6.40
Total	$10,367.41

Obituary.

The death of Captain Edwin Hammond of the Panama railroad steamship *Colon* occurred at a Philadelphia hospital on May 22, 1911, after a short illness. The funeral services were held at Philadelphia on May 23, and his body was cremated in accordance with a wish expressed before he died. A widow and one child survive him. Captain Hammond was born in Boston on July 25, 1870, and from 1884 to 1891 was employed as sailor on ships of various companies. From August, 1891, to September, 1896, he served as quartermaster, third, and second officer, successively, on the Pacific Mail Steamship Company's vessel *Costa Rica*, and from November, 1897, to May, 1898, with the exception of two months, when he was detailed for land duty on the Isthmus, he was quartermaster of the *Allianca*. Later, he was promoted to third, then to second, and, on April 12, 1901, to first officer of that ship. On December 20, 1901, he was reported by Captain Phillips of the *Advance* as "displaying coolness, nerve, and good seamanship in rescuing the crew of the schooner *Edward W. Young*," and, on the strength of this report, he was commended by the company. On August 21, 1902, he was appointed commander of the *Advance*, replacing Captain Phillips, lost at sea, and, on February 23, 1903, on account of the laying up of the *Advance*, was temporarily first officer of the *Allianca*. On July 21, 1905, he was reappointed commander of the *Advance*; in July, 1909, he was appointed commander of the *Allianca*; and, on September 15, 1909, he was placed in charge of the *Colon*.

Robert Mealey of Ogdensburg, N. Y., aged 46 years, employed as a powderman in Culebra Cut in 1907 and 1908, was killed in a blasting accident at Oruro in Bolivia, a few weeks ago. The contractors for whom he was working would like to know the whereabouts of his relatives.

The death of L. R. Dennis, an American, employed in the Atlantic Division, living at Mamei, occurred at Colon Hospital on Tuesday, June 20, of hæmoglobinuric fever. He was a native of Norwich, Connecticut, 41 years of age, and had been on the Isthmus seven years. A wife and five children survive him.

Unloaders in May.

The following statement shows the number of Lidgerwood cars unloaded by the Central Division during the month of May:

LOCATION.	No. of unloaders.	No. of trains.	No. of cars.
Balboa	3	984	19,680
Miraflores	3	737	14,740
Gamboa	4	992	20,827
Total	10	2,713	55,247

FOURTH OF JULY.

Outline of Program for Celebration at Cristobal—Conditions of Free Transportation.

The program for the observance of Independence Day at Cristobal on July 4 is, as follows:

MORNING.

Athletic events on Roosevelt avenue, 9 a. m. to 1 p. m. Twenty-two events are scheduled, eight of which will be laughable contests, and the remainder, standard events. Cash prizes, except in contested events, will be paid on July 4. The I. C. C. Band will play at the athletic games.

Baseball game at Colon park at 10 a. m. The Marine Band will play.

AFTERNOON.

Patriotic exercises in the Court of Honor on Roosevelt avenue, 1.15 to 2 o'clock. Program is, as follows:

Flag raising by Boy Scouts.
Introduction by presiding officer, Maj. Henry A. Brown.
Reading Declaration of Independence, Chief Justice Gudger, Canal Zone Supreme Court.
Address, Chairman and Chief Engineer, Col. Geo. W. Goethals.
National airs sung by school children, accompanied by I. C. C. Band.
"Flag of the free," Canal Zone high school.

Fire department drill, 2 to 3.30 o'clock.

Aquatic sports, 2 to 5 o'clock. The Marine Band will play.

Fire department ladder exhibition, 6 o'clock.

Band concert by the I. C. C. Band, 6 to 7 o'clock.

NIGHT.

Fireworks, Marine Band concert, 8 to 9 o'clock.

Dance at the Lincoln House, 9 o'clock.

TRANSPORTATION.

The following rules for the use of free transportation should be read carefully by all intending to take part in the celebration:

Passes are good for one person only, and an employe must obtain from the chief clerk of his department or division an additional pass for each member of his family who desires to ride free. These passes are good only from Panama, or any intermediate station, to Cristobal and return, transportation thereon southward being furnished only when Cristobal is the initial station. In other words, they are not good for transportation on southbound trains starting at any point other than Cristobal, and they will not be good on southbound trains unless they have been first punched, showing that they have been used for transportation to the Fourth of July celebration at Cristobal from some point along the line. The regular rates of transportation will be charged and collected for all other transportation than that covered by the special ticket, except that regular tickets, card, and trip passes over the Panama railroad will be honored on all trains on the Fourth of July, as on other days.

A light lunch will be served on dock No. 11 between 11 a. m. and 2 p. m. Drinking fountains will be installed at various points in Cristobal. Shelter will be provided, so that the races in the bay may be witnessed even if there is rain. Retiring rooms for ladies will be arranged for in the old DeLesseps' house at Cristobal Point, and the public school building, near the Commission clubhouse. Dressing rooms for the athletes will be arranged in building No. 1 on Cristobal Point.

The chairman of the finance committee reports that subscriptions are coming in from Canal employes rather slowly for the Fourth of July celebration. The committee was pleased to receive, during the past week, a number of contributions from residents of Panama and Colon, among them a subscription of one hundred dollars from President Arosemena of the Republic of Panama, which the President forwarded with an expression of his interest in Canal employes, and the celebration which will be held on the Fourth of July.

PANAMA RAILROAD COMPANY.

TIME TABLE FOR PASSENGER SERVICE ON JULY 4, 1911.

Supplement No. 1 to Current Time Table No. 9, Effective from 4 a. m., Tuesday, July 4, to 3.45 a. m., Wednesday, July 5, Only.

SOUTHWARD.									STATIONS.	NORTHWARD.							
FIRST CLASS.										FIRST CLASS.							
143 Pass.	141 Pass.	139 Pass.	137 Pass.	133 Pass.	131 Pass.	127 Pass.	121 Pass.	Miles from Colon.		122 Pass.	126 Pass.	128 Pass.	132 Pass.	134 Pass.	138 Pass.	140 Pass.	142 Pass.
A.M.	P.M.	P.M.	P.M.	P.M.	P.M.	A.M.	A.M.		Arrive	A.M.	A.M.	P.M.	P.M.	P.M.	P.M.	P.M.	A.M.
12.45	10.45	9.00	7.00	5.00	1.00	10.00	6.45	0.00	†Colon	8.30	9.00	12.00	3.00	6.00	8.00	11.40	2.00
s12.50	s10.50	s9.05	s7.05	s5.05	s1.05	s10.05	s6.50	1.77	†Mount Hope	8.25	s8.57	s11.56	s2.56	s5.56	s7.56	s11.37	s1.56
f12.55	f10.55	f9.10	f7.10	5.10	s1.10	f10.10	6.55	4.37	†Mindi	s8.20	s8.53	s11.50	s2.50	s5.50	s7.50	f11.31	f1.51
f1.00	f11.00	f9.15	f7.15	......	......	f10.15	......	6.79	New Gatun	......	......	......	......	......	......	f11.26	f1.46
s1.03	s11.03	s9.18	s7.18	s5.18	s1.18	s10.18	s7.01	7.88	†Gatun	s8.14	s8.45	s11.44	s2.44	s5.44	s7.44	s11.24	s1.44
1.05	11.05	9.20	7.20	5.20	1.20	10.20	7.03	10.41	†Bridge 15 (C.) (End D Track)	8.11	8.41	11.41	2.41	5.41	7.41	11.21	1.41
f1.21	f11.21	s9.36	s7.36	s5.36	f1.36	f10.36	f7.19	15.26	†Bohio	s7.56	s8.25	s11.25	s2.25	s5.25	s7.25	f11.05	f1.25
f1.27	f11.27	s9.42	s7.42	s5.42	s1.42	s10.42	s7.25	18.51	Frijoles	s7.50	s8.19	s11.19	s2.19	s5.19	s7.19	s10.59	f1.19
s1.33	s11.33	s9.48	s7.48	s5.48	s1.48	s10.48	s7.31	21.37	†Tabernilla	s7.44	s8.13	s11.13	s2.13	s5.13	s7.13	s10.53	s1.13
s1.38	s11.38	s9.53	s7.53	s5.53	s1.53	s10.53	s7.36	23.30	†San Pablo	s7.37	s8.08	s11.08	s2.08	s5.08	s7.08	s10.48	s1.08
f1 44	f11.44	f9.59	f7.59	f5.59	f1.59	f10.59	f7.42	25.74	†Mamei	s7.31	f8.02	f11.02	f2.02	f5.02	s7.02	f10.42	f1.03
s1.49	s11.49	s10.04	s8.04	s6.04	s2.04	s11.04	s7.48	28.27	†Gorgona	s7.25	s7.57	s10.57	s1.57	s4.57	s6.57	s10.37	s12.58
s1.54	s11.54	s10.09	s8.09	s6.09	s2.09	s11.09	s7.53	29.60	†Matachin	s7.20	s7.52	s10.52	s1.52	s4.52	s6.52	s10.32	s12.53
s1.59	s11.59	f10.14	s8.14	s6.14	s2.14	s11.14	s7.58	31.81	†Bas Obispo	s7.16	s7.47	s10.47	s1.47	s4.47	s6.47	f10.27	s12.48
	A.M.																
s2.05	s12.05	s10.20	s8.20	s6.20	s2.20	s11.20	s8.04	32.62	Las Cascadas	s7.10	s7.42	s10.42	s1.42	s4.42	s6.42	s10.22	s12.43
s2.10	s12.10	s10.25	s8.25	s6.25	s2.25	s11.25	s8.09	34.91	†Empire	s7.05	s7.37	s10.37	s1.37	s4.37	s6.37	s10.17	s12.38
s2.15	s12.15	s10.30	s8.30	s6.30	s2.30	s11.30	s8.14	35.90	†Culebra	7.00	s7.32	s10.32	s1.32	s4.32	s6.32	s10.12	s12.33
2.17	12.17	10.32	8.32	6.32	2.32	11.32	8.16	36.52	†Summit (Cab.) (End D Track)		7.30	10.30	1.30	4.30	6.30	10.10	12.31
s2.24	s12.24	s10.39	f8.39	f6.39	f2.39	f11.39	f8.23	39.98	†Paraiso Junction		f7.22	f10.22	f1.22	f4.22	f6.22	f10.02	s12.24
s2.26	s12.26	s10.41	s8.41	s6.41	s2.41	s11.41	s8.25	40.37	†Pedro Miguel		s7.19	s10.19	s1.19	s4.19	s6.19	s9.59	s12.21
s2.31	s12.31	s10.46	s8.46	s6.46	s2.46	s11.46	s8.30	41.37	Miraflores		s7.14	s10.14	s1.14	s4.14	s6.14	f9.54	s12.15
2.36	12.36	10.51	8.51	6.51	2.51	11.51	8.36		†Corozal Junc. (End D Track)		7.09	10.09	1.09	4.09	6.09	9.49	12.10
s2.38	s12.38	s10.53	s8.53	s6.53	s2.53	s11.53	s8.37	44.31	†Corozal		s7.07	s10.07	s1.07	s4.07	s6.07	s9.47	s12.08
f2.40	f12.40	f10.55	f8.55	f6.55	f2.55	f11.55	f8.39	44.99	Camp Diablo		f7.04	f10.04	f1.04	f4.04	f6.04	f9.44	s12.05
2.43	12.43	10.58	8.58	6.58	2.58	11.58	8.43	46.05	†Balboa Junction (End D Track)		7.02	10.02	1.02	4.02	6.02	9.42	12.03
2.45	12.45	11.00	9.00	7.00	3 00	12.00	8.45	47.14	†Panama		7.00	10.00	1.00	4.00	6.00	9.40	12.01
A.M.	A.M.	P.M.	P.M.	P.M.	P.M.	P.M.	A.M.		Leave	A.M.	A.M.	A.M.	P.M.	P.M.	P.M.	P.M.	A.M.
143	141	139	137	133	131	127	121		†Telegraph Stations.	122	126	128	132	134	138	140	142

GATUN SHUTTLE TRAIN.

135 Pass.	129 Pass.	125 Pass.	123 Pass.	STATIONS.	120 Pass.	124 Pass.	130 Pass.	136 Pass.
P.M.	A.M.	A.M.	A.M.	Leave Arrive	A.M.	A.M.	P.M.	P.M.
5.20	11.20	8.10	7.20	Colon	8.00	8.50	12.50	7.35
s5.25	s11.25	s8.15	s7.25	Mount Hope	s7.57	s8.47	s12.47	s7.32
s5.29	s11.30	s8.20	s7.30	Mindi	s7.53	s8.43	s12.43	s7.28
s5.34	s11.35	s8.25	s7.35	New Gatun	s7.48	s8.38	s12.38	s7.23
5.38	11.40	8.28	7.40	Gatun	7.45	8.35	12.35	7.20
P.M.	A.M.	A.M.	A.M.	Arrive Leave	A.M.	A.M.	P.M.	P.M.
135	129	125	123		120	124	130	136

No. 125 take siding at Mindi for No. 122.
No. 125 take siding at Gatun for No. 126.
No. 129 take siding at Gatun for No. 128.
No. 135 take siding at Gatun for No. 134.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

The Culebra indoor baseball team defeated the Gorgona team on the local floor on Saturday night, 21 to 2. The batteries for Culebra were Tupper and Cushing; for Gorgona, Weiser and Christiansen, pitchers, and Ridge, catcher. Tupper struck out 18 men and allowed only five hits. This was the last game of the season, and the first Gorgona has lost. The standing of the teams at the close of the season follows:

	Won	Lost	Percentage
Gorgona	9	1	.900
Culebra	8	2	.800
Empire	6	4	.600
Gatun	3	7	.300
Cristobal	2	8	.200
Corozal	2	8	.200

CULEBRA.

The high duckpin scores last week were, as follows: Huttelmeier, 104, 108, 104, 100, 101, 108; Mengel, 118; Silver, 110; Kennedy, 101; Helper, 106.

The afternoon gymnasium class which meets Mondays and Thursdays at 5.15 is well attended. More members are invited to join. An evening gymnasium class will be started for the purpose of carrying on apparatus work, tumbling, basketball, and exercise of a heavier nature.

EMPIRE.

The Cristobal duckpin bowling team took two out of three games from the Empire team on Saturday evening, June 24.

At a meeting of the Empire Literary and Debating Society held on Friday, June 23, the following officers were elected to serve six months beginning July 1: President, A. L. Zacharias; vice-president, H. W. Sawtelle; secretary-treasurer, H. W. Dorhmann; executive committee, O. Harlan and A. B. Dickson; program committee, F. W. Conner and Mark A. Hall; membership committee, W. G. Ross and O. King.

Forty new books have been added to the library, including some late fiction.

All those wishing to enter the handicap pool tournament for July will hand their names to manager of the pool room, or to the office. The tournament will begin on July 5.

A meeting of the old gymnasium class members, and those interested in the coming gymnasium work was held on Monday evening, June 26. Medals were presented to Charles Feurtado, G. R. Adams, F. Lang M. W. Jones, R. A. Koperski, and Mark A. Hall.

GORGONA.

The bowling match scheduled with Gatun on Gorgona alleys for last Saturday was postponed until July 1, when Gorgona will send a team to Gatun.

The high duckpin scores for the week ending June 24 were, as follows: J. Orr, 108; Haggerty, 107; Davis, 105; Sims, 101, 112, 104. High scores in tenpins: Weigold, 208; Bordt, 205; Stoehr, 202; Roper, 200.

The wrestling class has been temporarily disbanded, as a number of the wrestlers are training for the Fourth of July meet. The class will be reorganized after that date.

GATUN.

At a meeting of the literary club on Wednesday, June 21, M. S. Fox upheld the affirmative and R. M. Gamble the negative, in a debate on the subject, "Resolved, that the right of suffrage should be granted the women of the United States." Others taking part in the discussion were Messrs. Cotton, Smith, Wood, and Hill. A selection from Eugene Field was given by F. G. Smith. The club has accepted the challenge of the Cristobal literary club to debate the subject, "Resolved, that the railroads of the United States should be owned and operated by the Federal Government." Each club will be represented by six men, three of whom will debate at home and three away from home, taking opposite sides of the question. A general discussion on the subject will take place at the meeting of the Gatun club on Wednesday evening, June 28. A committee, composed of Messrs. Chatfield, Smith, and Shafer, will select the men to represent Gatun.

The executive council met on Friday evening, June 23. Reports of various chairmen of committees show the clubhouse to be in a flourishing condition. The membership on June 1 was 382.

Members interested in basketball met on Tuesday night, June 27, and organized a local league. Fred. Huber, chairman of athletics, will have charge.

Among those entered from Gatun for the Fourth of July meet are Shortt, Chatfield, Ottman, Mitchell, Hooker, Lincoln, Garrison, Billett, Porter, Ketalik, Jadwin, Bailey, and Cooling.

One hundred new books, mostly fiction, have been added to the library. More will be purchased in the near future.

Dr. Orenstein gave a sex talk on Sunday night, June 25. Seventy men were present.

CRISTOBAL.

The basketball games on Tuesday and Thursday night resulted as follows:

Tuesday—Sterner vs. Kavan, score 23 to 16 in favor of Sterner's team. Sterner, 2 goals, 7 foul goals; Thompson 4 goals; Frostrom, 1 goal; Wetherbee, 1 goal; Levy; Kavan, 4 goals; Ford, 2 goals; Guptil, 2 goals, 1 free throw; Simons, 1 goal, 1 free throw; Cousineau.

Thursday—Sterner vs. Luce, score, 24 to 12 in favor of Luce's team. Sterner, 1 goal, 9 free throws, 1 point awarded on foul; Thompson; Frostrom; Wetherbee; Levy. Luce, 5 goals, 5 free throws; Thomas; Jordan, 3 goals; Simons, 1 goal; Schwallenberg; Polson in place of Simons during second half.

The Wednesday night literary and debating club met, and the topic discussed was "Socialism." This week, the debate will be, "Resolved, that the Government should own and operate the railroads." Affirmative, Messrs. Chambers and Yeiser; negative, Messrs. Richards and Ware.

Thursday night, the anniversary banquet will be held at Cristobal hotel at 8 p. m. The occasion celebrates the fourth year this clubhouse has been open.

Empire took two games of duckpins from Cristobal on Saturday night with the following scores:

Empire.				Cristobal.			
Gustavson	89	101	96	Smith	92	88	94
Potter	107	102	91	Jacques	83	82	82
Gorham	81	83	94	DeCora	88	91	76
Pearson	89	73	99	Sullivan	98	101	85
Iluson	109	79	82	Wheeler	76		
				Bullard		83	83
Total	475	438	462		437	445	420

The high duckpin scores during the week ending June 24 were, as follows: Gibson, 101; Jacques, 104, 125; Wheeler, 103, 108, 100; Bullard, 126; Furlong, 100, 113; Louch, 107, 105, 102; Wood, 103; Sullivan, 101.

High tenpin scores: Furlong, 201; Blackburn, 209.

Rainfall from June 1 to June 24, 1911, Inclusive.

Stations.	Maximum in one day.	Date.	Total for period.
Pacific Section—	Ins.		Ins.
Ancon	.84	6	2.19
Balboa	.74	6	2.21
*Miraflores	.87	6	3.03
*Pedro Miguel	1.97	22	4.68
Rio Grande	.51	24	2.92
Central Section—			
Culebra	.35	18	3.00
*Camacho	.61	23	3.10
Empire	.60	12	4.09
Gamboa	.96	23	5.43
*Juan Mina	1.05	9	6.68
Alhajuela	2.70	9	9.21
*El Vigia	3.58	9	10.67
*Gorgona	1.68	9	6.34
San Pablo	1.35	13	4.70
Tabernilla	1.22	9	4.34
Bohio	1.45	23	5.85
*Monte Lirio	1.79	2	10.68
Atlantic Section—			
Gatun	2.38	1	13.35
*Brazos Brook	1.93	1	12.57
Cristobal	2.70	19	13.11
Porto Bello	2.12	22	†12.14

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

†To 5 p. m., June 16.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, June 26, 1911. All heights are in feet above mean sea level.

Day and Date	Station.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun. June 18	128.3	94.3	47.5	15.8	15.8
Mon. June 19	129.1	94.8	46.4	15.8	15.6
Tues. June 20	128.0	94.3	47.9	15.8	15.6
Wed. June 21	128.8	94.5	47.5	15.6	15.5
Thurs. June 22	142.0	103.6	55.9	17.3	15.8
Fri. June 23	137.8	101.9	57.0	20.7	17.5
Sat. June 24	128.7	95.0	48.7	18.3	17.6
Height of low water	125.0	92.0	44.0		

OFFICIAL CIRCULARS.

Consumption of Lubricating Oils.

CULEBRA, C. Z., JUNE 20, 1911.

CIRCULAR No. 290-C:

In order to obtain an accurate record of the consumption of lubricating oils, etc., on each item of equipment of the Isthmian Canal Commission and Panama Railroad Company, a "Lubricant request" (Form C. E. 303) has been provided, a suitable supply of which should be secured from the Depot Quartermaster on requisition in the usual manner. For convenient use, the form is bound in pads of 100.

In all cases where lubricants are desired for any piece of equipment, the engineer or other employe in charge of the operation of such equipment must fill out one copy of this form, sign it, and present it to a lubricating oil supply station, where the oil requested will be furnished, the date and place of filling request inserted in the spaces provided, and the form retained on file at the supply station.

The approved allowances of lubricating oils and other conditions in respect to the issue of lubricating oils will be observed in the use of this form. To prevent any delay or inconvenience in the use of this form a supply of same will be maintained at all lubricating oil supply stations, in addition to those supplied to engineers, etc., in charge of equipment, who, alone, shall be permitted to sign "Lubricant request."

At the end of each month the requests filled shall be used in compiling report on Forms C. E. 273-a and 273-b of lubricating oil consumed on each item of equipment.

No lubricants shall be issued from the different oil supply stations except on properly filled out "Lubricant request."

Suitable supply of this form should be secured at once and place in use without delay. A sample copy of same is enclosed herewith.

H. F. HODGES,
Acting Chairman, Isthmian Canal Commission.
Second Vice-President, Panama Railroad Company.

Wrong Use of the Penalty Envelope.

DEPARTMENT OF CIVIL ADMINISTRATION.
DIVISION OF POSTS, CUSTOMS, AND REVENUES.
ANCON C. Z., June 26, 1911.

The attention of the public, and especially the officials of the United States Government on the Isthmus, is invited to the wrong use of the penalty envelope in official correspondence carried on by officers of the Government of the Canal Zone with foreign postal administrations. In order that situations, not only embarrassing to the writers in the Canal Zone, but also to foreign postal administrations, may not arise, attention is called to provision of the postal laws covering this situation, as follows:

"*Matter entitled to admission to the international mails free of postage.*—The following articles are entitled to transmission in international mails free of postage, viz.: Official correspondence exchanged between postal administrations, between these administrations and the international bureau, and between the exchange offices of different countries, as well as correspondence concerning prisoners of war, and for or from them without regard to the locality of the prisoners or the manner in which the correspondence is transmitted. Postage upon all other articles can be prepaid only by means of postage stamps. The reply half of a double postal card, bearing a postage stamp of the country which issued the double card, is to be considered as prepaid."

TOM. M. COOKE, *Director of Posts.*

Family Quarters.

Applications for married quarters were on file on June 1, as follows:

PLACE.	No. 1 List.	No. 2 List.
Ancon	1	34 (1)
Ancon Hospital	3	5
Balboa	1	35 (8)
Corozal	2	37 (2)
Cristobal	1	121 (3)
Culebra	4	34
Empire	1	63 (24)
Gatun	....	138 (53)
Gorgona	11	102 (26)
Las Cascadas-Bas Obispo	....	34 (6)
Miraflores	....	2
Pedro Miguel-Paraiso	3	50 (24)
Porto Bello	....	10 (4)
Tabernilla	....	12
Toro Point	....	8
Total	27	685 (151)

NOTE.—Figures in parentheses represent occupants of nonhousekeeping quarters.

COMMISSARY DEPARTMENT.

The hours during which the commissaries are open are, as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning June 28.

FRESH MEATS.	Price.
Mutton—Stewing per pound	6
Shoulder, neck trimmed off, (4 pounds and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing, per pound	10
Shoulder, for roasting (not under 4 pounds), per pound	12½
Chops, shoulder, per pound	16
Chops, per pound	24
Loin, for roasting, per pound	24
Cutlets, per pound	28
Pork—Loin chops or roast, per pound	†15
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	8
Corned, No. 1, per pound	12
Corned, No. 2, per pound	10
Chuck roast (3 pounds and over), per pound	12
Pot roast, per pound	12½
Rib roast, second cut (not under 3½ pounds), per pound	16
Rib roast, first cut (not under 3 pounds), per pound	18
Sirloin roast, per pound	19
Rump roast, per pound	19
Porterhouse roast, per pound	20
Steak, chuck, per pound	12½
Round, per pound	13
Rib, per pound	18
Sirloin, per pound	19
Rump, per pound	19
Porterhouse (not less than 1½ pounds), per pound	20
Tenderloin (Western), per pound	24

MISCELLANEOUS.

Caviare, Russian per tin	47, 89
Livers—Beef, per pound	7
Calf, each	60
Half, each	30
Sausage—Pork, per pound	17
Bologna, per pound	10
Frankfurter, per pound	12
Lieberwurst, per pound	10
Devonshire Farm	17
Sweetbread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	24
one-half dozen only	13
Bluefish, fresh, per pound	14
Halibut, fresh, per pound	15
Shads, fresh, each	70
Shad roes, fresh, per pair	35

POULTRY AND GAME.

Chickens—Fancy roasting, milk fed, large, each	1.25
Fancy roasting, milk fed, med., each	1.00
Fancy roasting, corn fed, about 4½ pounds, each	90
Fowls, each 60, 70, 80, 90,	1.00
Ducks, Western, about 4½ pounds, each	1.00
Broilers, milk fed, each	60
corn fed, each	55
Turkeys, per pound	26
Squabs, each	35
Capons	2.10
Fryers, corn fed	60
Partridges, each	50
Grouse, each	50

CURED AND PICKLED MEATS.

Ham—German, Westphalia, per pound	36
Sugar cured, per pound	†18
Sliced, per pound	18
Half, for boiling, per pound	17
Boiled, per pound	22
Hocks, per pound	‡8
Bacon—Breakfast, whole piece, per pound	22
Breakfast, sliced, per pound	23
Pork, salt family, per pound	14
Ox Tongues each	75
Pig's feet, per pound	9
Tongues, per pound	14
Sliced bacon in 1-pound tins, per tin	30
In 1-pound jars, per jar	30

DAIRY PRODUCTS.

	Price.
Butter—Creamery special, per pound	†32
Cheese—Roquefort, per pound	38
Philadelphia cream, cake	18
Young America, per pound	18
Swiss, per pound	26
Edam, each	1.00
Camembert, in small tins, tin	14
Neufchatel, cake	6
Gouda, per pound	34
Milk (Certified), per bottle	**25
Buttermilk, bottle	**15
Ice cream, quart	‡25
½-gallon	‡50

VEGETABLES AND FRUITS.

Beets, per pound	6
Celery, per head	10
Cabbage, per pound	3
Cucumbers, per pound	10
Egg plant, per pound	*07
Lettuce, per pound	*10
Onions, per pound	5
Potatoes, white, per pound	3
sweet, per pound	2
Peppers, green, per pound	10
Rhubarb, per pound	5
Spinach per pound	4
Tomatoes, per pound	8
Yams, per pound	3
Apples, fancy table, per pound	10
Lemons, dozen	24
Limes, per 100	80
Oranges, Jamaica, per dozen	12
Oranges, California, per dozen	36
Watermelons, each	40

*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal and Colon during the week ending June 24:

Colon, June 18, from New York, with 22 dredge buckets, 9 packages launch parts for Atlantic Division; 43 barrels alcohol for Sanitary Department; 8 cases fire hose for Department Civil Administration; 3 cases tinware, 20 cases picks, 10 cases stove parts, 4 cases agate pitchers, 32 incandescent lamps, 34 barrels rosin for stock; and a miscellaneous cargo, the whole consisting of 230 packages, weighing 65 tons.

Euxenia, June 20, from New York, with 15,230 barrels cement for Atlantic Division; 15,230 barrels cement for Pacific Division.

Metapan, June 22, from New York, with 100 coils Manila rope, 540 pices black rope, 135 coils wire rope, 14 bundles brooms for stock.

Abangarez, June 22, from New Orleans, with 25 cases cold shuts for Central Division; 10,826 feet white oak lumber for Mechanical Division; 3,530 bales hay for stock.

Allionco, June 23, from New York, with 7 cases dredging sleeves for Atlantic Division; one cement gun and appurtenances for Central Division; 40 cases gauze, 90 kegs green soap for Sanitary Department; 1 case auto fire alarm apparatus for Mechanical Division; 14 cases tent flies, 12 cases waiters' trays, 40 cases insect exterminator, 6 cases mattress ticking, 8 cases Gem clips, 4 casks crockery for stock; and a miscellaneous cargo, the whole consisting of 365 packages, weighing 89 tons.

Sale of Buildings.

OFFICE OF GENERAL SUPERINTENDENT.
COLON, R. P., June 22, 1911

Sealed proposals will be received at this office until 3 p. m., Thursday, July 6, 1911, and then opened, for the sale, either one or both, on the ground as they stand, of the residence and store buildings at present occupied by Mr. J. L. Kerr, and situated on lots Nos. 356 and 358, city of Colon.

The successful bidder to remove said buildings from their present location within twenty days' time after notification that bid has been accepted.

Envelopes containing proposals should be endorsed "Proposals for the purchase of buildings," and addressed to J. A. Smith, General Superintendent, Panama railroad, Cristobal, C. Z.

The Panama Railroad Company reserves the right to reject any or all bids.

J. A. SMITH, *General Superintendent.*

Married.

ADAMS-HUDELSON—On May 18, 1911, in Gooding, Idaho, Mary Helen Hudelson of Gooding, to Roger H. Adams of Quitman, Miss. Canal Zone residence, Culebra.

The following vessels arrived at or departed from the port of Balboa during the week ending June 24:

Arrivals—June 19, *Montaro*, from Callao; June 20, *City of Panama*, from San Francisco; June 21, *Quito*, from Guayaquil; *Paleno*, from Valparaiso; June 24, *Peru*, from Guayaquil; *Mackinow*, from San Francisco.

Departures—June 19, *Mexico*, to Valparaiso; June 20, *San Juan*, to San Francisco; *Chile*, to Guayaquil; June 21, *Stanley Dollar*, to San Francisco; June 23, *Manavi*, to Buenaventura.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to changes.

NEW YORK TO CRISTOBAL.

Panama	P. R. R.	Saturday	June 24
Cristobal	P. R. R.	Saturday	June 24
Advance	P. R. R.	Friday	June 30
Colon	P. R. R.	Friday	July 7
Allianca	P. R. R.	Thursday	July 13
Panama	P. R. R.	Wednesday	July 19
Advance	P. R. R.	Tuesday	July 25
Colon	P. R. R.	Monday	July 31
Allianca	P. R. R.	Saturday	Aug. 5
Panama	P. R. R.	Saturday	Aug. 12
Advance	P. R. R.	Friday	Aug. 18
Colon	P. R. R.	Thursday	Aug. 24
Allianca	P. R. R.	Wednesday	Aug. 30
Panama	P. R. R.	Tuesday	Sept. 5

CRISTOBAL TO NEW YORK.

Allianca	P. R. R.	Friday	June 30
Panama	P. R. R.	Thursday	July 6
Advance	P. R. R.	Wednesday	July 12
Colon	P. R. R.	Wednesday	July 19
Allianca	P. R. R.	Tuesday	July 25
Panama	P. R. R.	Monday	July 31
Advance	P. R. R.	Sunday	Aug. 6
Colon	P. R. R.	Saturday	Aug. 12
Allianca	P. R. R.	Friday	Aug. 18
Panama	P. R. R.	Thursday	Aug. 24
Advance	P. R. R.	Wednesday	Aug. 30
Colon	P. R. R.	Tuesday	Sept. 5
Allianca	P. R. R.	Monday	Sept. 11

NEW YORK TO COLON.

Prinz Eitel Friedrich	H.-A.	Friday	June 23
Magdalena	R. M.	Saturday	June 24
Almirante	U. F. C.	Thursday	June 29
Prinz Aug. Wilhelm	H.-A.	Saturday	July 1
Santa Marta	U. F. C.	Thursday	July 6
Prinz Sigismund	H.-A.	Friday	July 7
Clyde	R. M.	Saturday	July 8
Metapan	U. F. C.	Thursday	July 13
Prinz Joachim	H.-A.	Saturday	July 15
Zacapa	U. F. C.	Thursday	July 20
Prinz Eitel Friedrich	H.-A.	Friday	July 21
Atrato	R. M.	Saturday	July 22
Almirante	U. F. C.	Thursday	July 27
Prinz Aug. Wilhelm	H.-A.	Saturday	July 29
Santa Marta	U. F. C.	Thursday	Aug. 3
Prinz Sigismund	H.-A.	Friday	Aug. 4
Thames	R. M.	Saturday	Aug. 5

COLON TO NEW YORK.

Prinz Sigismund	H.-A.	Saturday	June 24
Clyde	R. M.	Tuesday	June 27
Metapan	U. F. C.	Thursday	June 29
Prinz Joachim	H.-A.	Tuesday	July 4
Zacapa	U. F. C.	Thursday	July 6
Prinz Eitel Fredrich	H.-A.	Saturday	July 8
Atrato	R. M.	Tuesday	July 11
Almirante	U. F. C.	Thursday	July 13
Prinz Aug. Wilhelm	H.-A.	Tuesday	July 18
Santa Marta	U. F. C.	Thursday	July 20
Prinz Sigismund	H.-A.	Saturday	July 22
Thames	R. M.	Tuesday	July 25
Metapan	U. F. C.	Thursday	July 27
Prinz Joachim	H.-A.	Tuesday	Aug. 1
Zacapa	U. F. C.	Thursday	Aug. 3

NEW ORLEANS TO COLON.

Atenas	U. F. C.	Saturday	June 24
Turrialba	U. F. C.	Saturday	July 1
Abangarez	U. F. C.	Saturday	July 8
Atenas	U. F. C.	Saturday	July 15
Turrialba	U. F. C.	Saturday	July 22
Abangarez	U. F. C.	Saturday	July 29

COLON TO NEW ORLEANS.

Abangarez	U. F. C.	Thursday	June 29
Atenas	U. F. C.	Thursday	July 6
Turrialba	U. F. C.	Thursday	July 13
Abangarez	U. F. C.	Thursday	July 20
Atenas	U. F. C.	Thursday	July 27
Turrialba	U. F. C.	Thursday	Aug. 3

Hamburg-American steamers leave Colon for New York via Kingston at 10 a. m. on sailing dates. The *Prinz August Wilhelm* and *Prinz Joachim* call at Santiago de Cuba, on both outward and homeward voyages. A ship will leave Colon for Bocas del Toro at 5 p. m. on July 12, and August 9; and for Port Limon at 5 p. m. on July 12, July 26, and August 9.

The Leyland line steamer *Mexican* sails for New Orleans direct, on or about Wednesday, July 5.

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships for New York via Kingston on Thursday at 11 a. m.; for Bocas del Toro on Monday at 6 p. m.

CANAL RECORD

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THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Central Division Excavation.

The excavation in the Central Division in June was 1,433,304 cubic yards, which makes the total for the fiscal year 18,479,642 cubic yards, the largest fiscal year excavation on record, exceeding the best previous, that of 1909, by 37,018 cubic yards. This total includes Culebra Cut, concerning which, an article is published elsewhere in this issue, and the Chagres River section, where the bulk of the work was ended in March, and in which there has been but little done to swell the yardage during the past three months. At present, there are only two pieces of work in progress in this section, viz., where contractors are excavating at Gorgona and Bohio, the total for the former place in June being 11,216 cubic yards, and for the latter, 21,072 yards.

New Filtration Plant at Gatun.

The new filtration plant for the Agua Clara water works at Gatun is completed, with the exception of the exterior and interior stairways and a small amount of work remaining to be done on the sedimentation basin, and the installation of the piping system. The latter has been purchased in the States, and will probably be delivered on the Isthmus within the next thirty or forty days.

The filter building is of reinforced concrete, 41 by 54 feet in size, and three stories high. On the first floor will be located the controllers and the general pipe system; the second floor supports the valve stands for controlling the piping system, filter tables, and gives access to the tops of the filters. The third floor provides storage room for the aluminum sulphate supply. The concrete work is approximately 95 per cent completed. The contract for most of the piping, controllers, and regulators, and loss of head gages, air compressors, and hydraulic valves, was awarded to the American Water Softening Company.

During the time which will elapse before the plant will be ready for operation, a small experimental filter will be set up at the Mount Hope pump station, adjacent to the sedimentation basin at that place. Water from this basin will be used in the experimental filter for the purpose of determining the grade of sand most suitable for the filter beds in the new filter plant at Gatun. as well as for the pressure filters at Mount Hope. Chamé sand, Porto Bello sand, and a much coarser and sharper grade of sand from the vicinity of Chorrera will be experimented with.

In addition to the filtration plant at Gatun, a laboratory building of reinforced concrete, having a floor plan of approximately 20 by 20 feet will be erected for conducting analyses of water to determine the amount of aluminum sulphate to be used in connection with the water supply for both the Agua Clara and the Brazos Brook reservoirs.

846 Tons of Dynamite in Single Shipment.

The largest cargo of dynamite ever brought to the Isthmus on one vessel was unloaded from the Munson Line steamship *Alm*, which arrived at dock No. 14, Cristobal, on June 27. The shipment consisted of 29,363 cases, the contents of which aggregated 1,691,191 pounds, equivalent to about 846 tons, and was applied on the requisition for explosives placed in the United States for the fiscal year ending June 30, 1911. The shipment, divided into its various classes, is given below:

KIND.	No. Cases.	Pounds.
60 per cent saltpetre dynamite...	8,105	676,191
45 per cent saltpetre dynamite...	3,758	
60 per cent Atlas dynamite......	8,000	464,000
45 per cent Atlas dynamite......	9,500	551,000
Total........................	29,363	1.691,191

Freeing Cocoli Lake of Chlorine.

The chlorine content in Cocoli Lake, caused by salty water leaking through a toe of the west dam at Miraflores, has been reduced since early in April, when an analysis showed 1,950 parts of chlorine to a million parts of water. On May 3, an analysis showed 480 parts of chlorine to a million of water, both at the lake surface and at the intake, which is 10 feet below the surface, while at the Ancon filter, after the lake water had become mixed with the flow from the Rio Grande reservoir the content was 180. A late analysis, that of June 24, showed but 220 parts to the million on the lake surface and at the intake, and only 120 parts at Ancon filter.

An 8-inch, motor-driven centrifugal pump was installed on the bank of the lake in April to remove as much as possible of the salty water. It was operated with good results, but when the break occurred in the temporary spillway in the Miraflores dam on May 24, the pump was removed to the lock site to assist in freeing the pit of the flood water. It is now proposed to install at Cocoli Lake, in place of this pump, one of the four 20-inch dredge pumps, purchased for use in connection with hydraulic operations, and thus hasten the work of ridding the lake of its chlorine content. The pump will probably be ready for service this week, and as its maximum capacity is about 10,000 gallons a minute, it is expected that a month's operation of it will be sufficient. There has been no further leakage from the hydraulic fill through the toe of the dam into the lake.

Culebra Cut Transportation.

A new incline into Culebra Cut, between Paraiso and Cucaracha, on the east side of the Canal, is about to be constructed. It will utilize the 95-foot berm part of the distance. By means of this new track, trains which now enter the Cut by way of the Contractor's Hill incline, on the west side of the Canal, and shift back and forth in order to reach the shovels on the east side, south of Gold Hill, will save considerable time in entering the Cut, and the amount of spoil hauled out each day will be increased by several hundred cubic yards

Buoys Near Pacific Entrance.

Two mooring buoys have been received on the Isthmus by the Panama railroad and will be placed near the south end of the wharf at Balboa. They are to be anchored at this point, in order to permit United States and other vessels to coal from lighters under more favorable conditions than at the present anchorage, east of Flamenco Island, and to lessen the danger to the lighters on account of heavy weather. The new buoys are 12 feet in diameter, 10 feet deep, and are complete with fenders, etc. They will be anchored in position by six mushroom anchors, each weighing about 4,000 pounds, and connected by a total of 1.200 feet of 1½-inch short link chain. They are the largest buoys now in these waters, and when placed on a flat car for transportation across the Isthmus, overlapped the required clearance in passing trains on the Panama railroad double track line by about two feet six inches, necessitating a specially arranged trip.

Six mooring buoys, each eight feet in diameter, and nine feet deep, were received by the Pacific Division on February 18, for marking purposes. Two of these have been placed at Punta Chamé, two at Naos Island, near the place where the suction dredge *Culebra* is beached when extensive repairs are made to the vessel, and two are in stock.

Work at Cristobal Marine Shops.

The work at the Cristobal drydock shops on July 1 included repairs to seven vessels, and the construction of two derrick barges, a description of which appeared in THE CANAL RECORD of May 24. One of these barges was launched on Thursday, June 15, and with the exception of building the boiler house, work on it is at a standstill pending the arrival of the engine equipment. Work on the shear legs and the boom of the derrick equipment is under way, and the boom base castings, manufactured at Gorgona shops, are being

NOTES OF PROGRESS.

(*Continued.*)

machined and finished at the marine shops. Structural work on the other derrick barge has been started at the marine ways.

Dredge *No. 5*, which has been given a general overhauling, will go into commission again this week, replacing dredge *No. 6*, which sank in the Canal, near Mindi, on June 19. The dipper dredge *Chagres* is receiving a complete overhauling, and, in addition, is being fitted with a new boom of the type carried by the dredge *Mindi*, together with a new turntable and base casting. The Panama railroad tug *Phoenix*, barges *Nos. 5* and *14*, and scow *No. 112*, are being thoroughly overhauled, the work including renewal of the combings, repairs to the towing machines on the barges, and the repainting of all the vessels.

Ancon Crusher.

A statement of the rock crushed at Ancon quarry, by days, during the two weeks ending July 1, follows:

DATE.	Hours worked.	Cubic yards.
June 19	7:50	2,641
June 20	7:00	2,435
June 21	7:25	2,449
June 22	3:20	1,982
June 23	7:25	2,466
June 24	7:20	2,647
Total	40:20	14,620

DATE.	Hours worked.	Cubic Yards.
June 26	7:30	2,702
June 27	8:30	3,120
June 28	7:40	2,952
June 29	7:00	2,979
June 30	7:00	2,693
July 1	6:40	2,698
Total	44:20	17,144

Pacific Division Sand Service.

Sand was supplied in June by the Pacific Division service, as follows:

DESTINATION.	Number Cars.	Cubic Yards.
Pacific Division	2,523	37,845
Central Division	19	285
Atlantic Division	11	259
Mechanical Division	2	50
Quartermaster's Department	4	100
Panama railroad	6	150
Miscellaneous	20	330
Total	2,585	39,019

New Home of University Club.

Plans have been completed for the new clubhouse of the University Club in Panama, the majority of whose members are Canal and Panama railroad employes. The building will be situated on property recently purchased by the club, on the peninsula upon which the walled section of the city was situated. This site is immediately back of Las Bovedas, the old fort and prison, commonly known as "the sea wall," and the building will front upon an arm of the bay looking towards Balboa, and Ancon Hill. The Spanish mission style has been followed in the plans, and it is proposed to finish the interior in the same style. The building will be 106 feet long, 42 feet wide, and two stories high, with light on four sides. A recessed entrance will lead into a center hallway, from which steps to the second floor will branch off near the entrance, so that persons wishing to use the library, or the ladies' rooms, may do so without passing through the men's part of the house. On the ground floor will be billiard and card rooms, a grill and café, kitchen, pantry, store room, and dining room, the last named looking out upon First street and the sea wall. On the second floor, will be the library, and dining and retiring rooms for ladies. This floor will be so arranged that it may be cleared for dancing, leaving a ballroom about 40 by 75 feet. The plans and specifications may be seen at the store of Vibert and Dixon on Central avenue in Panama. It is expected that the bids will be opened the last week in July.

CONCRETE WORK IN THE LOCKS.

About 56 per cent of the concrete for all the locks is in place, the amount at the close of work on July 1 being 2,390,192 cubic yards, out of a total of approximately 4,284,400. A total of 28,553¼ cubic yards of concrete was laid in the locks during the week ending July 1.

GATUN LOCKS.

About 69 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of work on July 1, being 1,429,709 cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each day for the week ending July 1, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 6 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
June 26	1,224	28:30	7	500	8:30	2	202¼	1,926¼
June 27	1,750	27:22	7	552	7:40	2	245½	2,547½
June 28	1,628	26:46	7	576	8:40	2	305¼	2,509¼
June 29	2,334	47:53	7	536	7:10	2	226½	3,096½
June 30	1,634	30:37	7	736	7:40	2	204	2,574
July 1	1,588	23:55	7	610	8:40	2	98¾	2,296¾
*Portable mixers	....	....	......	376	....	......	....	376
Total	10,158	185:03	7	3,886	48:20	2	1,282¼	15,326¼
Previously reported	....	....	......	....	....	......	....	1,414,382¾
Grand total	....	....	......	....	....	......	....	1,429,709

*The 376 yards shown for the portable mixers are reeinforced concrete, and were placed on the following days: June 26th, 50½; June 27th, 68; June 28th, 69½; June 29th, 38; June 30th, 89; July 1st, 61.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is about 81 per cent completed, 675,266 cubic yards, out of a total of 837,400, having been placed at the close of work on July 1. The record for each of the six eight-hour working days of last week, follows:

DATE.	AUXILIARY PLANT.						Large stone.	Total.
	2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
June 26	788	17:00	3	132	6:50	1	2	922
June 27	648	14:00	3	185	10:10	2	....	833
June 28	358	10:00	2	167	12:33	2	....	525
June 29	624	17:00	3	230	12:33	2	....	854
June 30	788	18:00	3	223	13:00	2	....	1,011
July 1	849	18:50	3	220	12:25	2	....	1,069
Total	4,055	94:50	2.83	1,157	66:51	1.83	2	5,214
Previously reported	....	....	......	....	....	......	4,400	670,052
Grand total	....	....	......	....	....	......	4,402	675,266

MIRAFLORES LOCKS.

About 21 per cent of the concrete for the system of two twin locks at Miraflores was in place on July 1, the total amount on that date being 285,217 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT.							Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
June 26	1,194	27:83	4	222	14:50	2	....	....	......	....	1,416
June 27	994	24:00	4	421	25:00	4	....	....	......	....	1,415
June 28	1,004	24:50	4	213	17:00	3	....	....	......	....	1,217
June 29	1,126	27:67	4	307	17:00	4	....	....	......	....	1,433
June 30	1,104	24:77	4	277	24:00	4	....	....	......	....	1,381
July 1	950	17:07	4	186	15:00	3	....	....	15	....	1,151
Total	6,372	145:84	4	1,626	112:50	3.33	....	....	15	....	8,013
Previously reported	....	....	......	....	....	......	....	....	......	3,693	277,204
Grand total	....	....	......	....	....	......	....	....	......	3,693	285,217

TEST OF CEMENT GUN.

Machine for Coating Surfaces to be Tried on Sides of Culebra Cut.

A test of the cement gun as a means of coating the surface of rock in Culebra Cut to prevent disintegration is in progress. The so-called "gun" is a compressed air apparatus for forcing cement and sand from a tank through a nozzle, at the mouth of which, water is mixed with these materials, forming a concrete which is cast upon the surface to be coated with such force as to become part of the rock itself.

For the work in Culebra Cut, the apparatus is mounted on a flat car, at one end of which, is a bin for mixing the sand and cement. One day's supply is carried, or enough to coat 200 square yards with a layer one inch thick, in nine hours of work. The car was rigged up at Empire shops, and the machine was tested by allowing it to coat a boiler with asbestos. Five men are required in operating the plant, their work including mixing and delivering the materials, and operating the gun.

The first work to be undertaken is coating the surface of the soft rock which the excavation has uncovered in Contractor's Hill. This soft rock is a fine grained clay transported and deposited by water, moderately hard when first exposed, but crumbling rapidly when in contact with the air. Of it, the chief geologist of the United States Geological Survey said, in his report of November 15, 1910:

"Under certain conditions, this surface disintegration becomes a more serious matter. For example, the contact between the intrusive andesite of Contractor's Hill, and the sedimentary clays, dips away from the Canal at an angle of 55 degrees. The crumbling of the clays below the contact leaves the andesite mass overhanging, and the overhang will increase as the Canal is carried to its full depth and more clay is exposed. With a rock so much fractured as the andesite, this condition is unsafe, and the exposed surface of the underlying clay should, therefore, be protected from further disintegration."

Knights of Pythias Subscription.

In case the letter signed by A. M. Warner, which appeared in the current issue of THE CANAL RECORD, should create a wrong impression upon the readers, I wish to make the following explanation:

Knowing that individual members of the K. of Ps., like most other organizations, regarded charity as one of the cardinal virtues, more especially to the widow and the fatherless of its late members, I, in ignorance of their by-laws, thought it would be a matter of courtesy to them to combine their name with the Army and Navy Union in soliciting subscriptions to assist the family of a former member of both organizations, and, therefore, on the spur of the moment, issued appeals with the following heading:

"Your sympathy and assistance is solicited on behalf of.......... This list is issued jointly by the Knights of Pythias, and the Army and Navy Union, and these subscriptions are being made in order that they may be cared for while on the Isthmus, and to see them through to their home in Washington, D. C."

On hearing that this was against their rules, I at once had the names of both organizations crossed off of the three lists that had been issued, and published others without the so-called illegal heading. I accept full responsibility for what has been done, and feel confident that Mr. Warner's concluding paragraph. that "all concerned will govern themselves accordingly," will result in their further assistance to those who have had their "bread winner" taken from them at a time when they were incapable of taking care of themselves.

ALFRED SMITH,
Adjutant, Army and Navy Union.

EMPIRE, C. Z., June 30, 1911.

Knights of Columbus.

A party of eighteen members of the Order of the Knights of Columbus arrived in Colon from New Orleans, on Thursday, June 29, for a six days' visit to Panama and the Canal Zone. On Saturday, there was a meeting with exemplification of the third degree at the old administration building in Panama. On Sunday, the party attended service at the cathedral in Panama at 9 o'clock, and at 10.15 left for a sightseeing trip over the Canal work, returning over the relocation of the Panama railroad. On Monday evening, an open meeting was held in Ancon Hall, the Bishop of Panama attending. On Tuesday, the visitors participated in the celebration of the national holiday. On Wednesday, they spent the day in sightseeing in the city of Panama, and on Thursday, they will sail for New Orleans by the steamer *Atenas*.

Improved Order of Red Men.

A meeting will be held in the Kangaroo hall, at Empire, Sunday, July 9, to raise the chiefs for the ensuing term to their respective stations. All the chiefs-elect of the eight tribes are requested to be present, and as many others as can make it convenient to be there. After the raising of chiefs, matters of interest to the tribes in common may be brought up by duly authorized representatives of the tribes, for discussion and decision.

Refreshments will be provided by Cocles tribe.

W. H. KROMER, *D. G. I.*

CRISTOBAL, C. Z., July 5, 1911.

Rifle Match for Silver Cup.

A members' match for the silver cup donated by a Panama City hardware company will be shot at the Gamboa range by the Canal Zone Rifle Club on July 9. The cup will become the property of the person making the highest score in the four regular matches.

Fourth of July Fire Department Contests.

The winners in the Fourth of July fire department contests at Cristobal were, as follows:

Hose races between volunteer fire companies, consisting of a run of 125 yards to hydrant with reel, laying 150 feet of hose, breaking coupling on last section, putting on nozzle, and turning on water. Winners—Gatun Volunteer Company No. 3, first prize, $75; Gatun Volunteer Company No. 2, second prize, $50; Gorgona Volunteer Company, third prize, $25. Time, 36 seconds.

Coupling contest between individual members of volunteer fire companies, consisting of running 50 feet, breaking coupling, and putting on nozzle. Winners—Gatun Volunteer Company No. 3, first prize, $7.50; Gatun Volunteer Company No. 2, second prize, $5. Time, 9 2-5 seconds

Contest between volunteer fire companies in taking out middle section of a charged line of 150 feet of hose, with nozzle attached, without shutting down hydrant, and connecting the first and third sections. Winners —Gatun Volunteer Company No. 3, first prize, $7.50; Gatun Volunteer Company No. 2, second prize, $7.50. Time, 16 9-10 seconds.

An interesting Pompier ladder and life saving exhibition was held at the Cristobal fire station tower at 6 o'clock in the evening.

Licenses for Chauffeurs.

The Board of Local Inspectors will hold an examination for chauffeurs' licenses in Cristobal, at the office of the deputy collector of revenues, on Saturday, July 15, at 8 a. m. All applicants are required to have their application blanks properly filled and endorsed before entering the examination.

An examination for the same purpose will be held in Ancon on Wednesday afternoon, July 19, at 2 o'clock.

For information, address Board of Local Inspectors, Ancon, C. Z.

Gatun Dam Spillway.

The concrete work in the spillway of Gatun Dam is about 64 per cent completed, 142,889 cubic yards, out of a total of 225,000, having been placed at the close of work on July 1. A statement of the amount laid each working day last week, and of the total in place, follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
June 26	152	7:00	1
June 27	236	7:30	1
June 28	208	7:30	2
June 29	260	8:00	2
June 30	244	8:00	1
July 1	296	8:00	2
Total	1,396	46:00	1.50
Previously reported	141,493	....	....
Grand total	142,889		

Porto Bello Crusher.

A statement of the work done at the Porto Bello crusher, by days, for the week ending July 1, follows:

DATE.	Hours worked.	Cubic Yards.
June 26	3:53	1,748
June 27	3:56	2,056
June 28	4:28	1,973
June 29	3:27	1,731
June 30	3:32	1,743
July 1	4:19	2,010
Total	23:35	11,261

Homicide Cases.

Herbert Berkley, a native of St. Kitts, shot a negro woman named Priscilla Muir at Mount Hope on the night of June 25, and she died on June 27. Berkley is in jail awaiting trial.

Alexander Mitchell, a Greek citizen of the United States, was struck on the head with an iron pipe by Jeremiah Wayland of St. Kitts, while both men were on a Canal clapet at dock No. 13, Cristobal, on the night of June 29. Mitchell died that night, and Wayland is in jail awaiting trial.

Ensigns David G. Copeland and Greer A. Duncan, U. S. N., special students in engineering at Rensselaer Polytechnic Institute, have been assigned to observation of the Canal work during the summer school vacation, at the close of which, they will return to their studies in the States.

PACIFIC COAST LIGHTS.

Recommendations for Aids to Navigation in the Gulf of Panama.

Shortly after the wreck of the steamer *Taboga* off Cape Guanico on the Pacific coast of Panama, the Government of Panama requested that the assistant engineer employed by the Commission on the lighting of the Canal, be detailed to investigate the question of placing lights and other aids to navigation at various points in Panama Bay, where they will be of most assistance to vessels seeking the port of Panama and the Pacific entrance to the Canal. In company with an engineer employed by the Government of Panama, the Commission engineer made a four days' trip along the coast, and to the Pearl Islands, June 21–24, and his report, with estimates, has been forwarded to the Government of Panama.

It is recommended that lights be established at Cape Mala, San José Island, Bona, and Melones Islands, an abstract of the recommendations being, as follows:

Cape Mala—This is a low, rocky point at the easterly extremity of the peninsula, comprised in the provinces of Veraguas and Los Santos, and is important and dangerous to all shipping entering Panama. It should be marked by a light of the first order. It is recommended that a reinforced concrete octagonal tower, 100 feet high from base to focal plane, be erected on a site about 40 feet above mean high tide, giving a total height of 140 feet, from which the light may be seen a distance of 18 miles at sea. A light showing a double flash every ten seconds, with incandescent oil-vapor illuminant, is recommended in preference to acetylene gas, because, in the long run, it will be cheaper, although the initial cost will be more. This station will require the service of a light keeper, and one assistant, and the station must include quarters for them. Estimated cost, $56,700.

San José Island—This is the southwesterly island of the Pearl Island group, and a light is recommended for this point, because of the strong and irregular currents in the Gulf of Panama, making it necessary that ships leaving Panama Bay have a positive point for departure. The site selected is about 100 feet above mean high tide on the southwesterly point of the island, and the tower should be 50 feet from base to focal plane, thus giving a total height of 150 feet, from which the light will be visible 16 miles at sea. A skeleton tower, constructed of reinforced concrete, surmounted by a third order lantern, showing a single flash every five seconds, is recommended. The illuminant will be acetylene gas, and the lantern will be seen through 270 degrees of the horizon. Estimated cost, $13,500.

Bona Island—This island is situated about 25 miles south of Panama, and a light established there will be an aid, both to coastwise and general shipping. Since the range of visibility of this light need not be greater than 11 or 12 miles, it is recommended that an acetylene lamp, mounted upon a reinforced concrete post, be established. The site for the light is at the top of the highest part of the island, about 670 feet above mean high tide, and the post should be about 30 feet high, with a small house at the base to protect the gas accumulators, and the valves. It would be preferable to have this lamp at a lower elevation, but this is not feasible, because the light must be visible over the whole horizon. The light recommended is one showing a group of four flashes every 10 seconds. Estimated cost, $3,850.

Melones Island—This is a small islet, northwesterly from Taboga Island, and a light on it will serve as an aid to coastwise shipping, and likewise guard against the dangerous Melones Rock. It is recommended that a small post of reinforced concrete be erected, surmounted by an acetylene gas lamp, showing a group of three flashes every nine seconds. The site new occupied by a temporary light installed by the Canal Commission is recommended. Estimated cost, $1,750.

The high pressure system of acetylene illuminant recommended for the three small lights provides for the generating, purifying, drying, and storing of the gas in steel cylinders, or accumulators, at a central charging plant, where the cylinders are charged at a pressure of 150 pounds per square inch. The cylinders are packed with asbestos discs, and filled with acetone, the pressure of the latter increasing the storage capacity of the cylinders, and it and the asbestos together, obviating any danger of explosion. The cylinders are transported to the lights whenever recharging is necessary, which, in the case of the lamps recommended, will be about once in six months.

With regard to other lights recommended by local shipping interests, the report says:

A number of other aids to navigation have been recommended by captains of vessels plying up and down the coast, but as they are of local interest, the proposed sites were not visited. The recommendations are, as follows: Puerto Obaldía, province of Coclé, beacon, 35 feet high, green light; Puerto Posada, province of Coclé, beacon, 35 feet high, red light; Aguadulce, Banco Negro, province of Coclé, beacon 35 feet high, white light; Montijo Bay, province of Veraguas, beacon, 15 feet high, white light; David Bay, Chiriqui, beacon, color of light not specified; Boca San Pedro, Chiriqui, buoy with green light; Boca Brava, Chiriqui, buoy with red light; Pacheca Island, northerly one of Pearl Island group, beacon, 50 feet high, with white light, Garachiné Point, beacon, 50 feet high, white light.

The localities recommended for these local aids are accessible for erecting post lights and tripods at small cost, and lights should be established by the Republic of Panama, if the commerce of those places warrants their establishment. In this connection, it is proper to mention that the establishment of lights and buoys by steamboat companies, and other private parties, for their own convenience, should not be encouraged. Private lights are usually established and extinguished without notice, much to the annoyance of mariners, who are confused and misled by irregular lights.

Should the Republic of Panama decide to establish lights at the aforementioned places, I would respectfully recommend that red and green lights be omitted, and that the distinctive characteristics be given the lights by means of white flashes. The white light is visible for a greater distance, and, by the use of flashes, a less amount of gas is consumed. I would recommend the following characteristics:

Puerto Obaldía—One group of five flashes every eleven seconds; acetylene; estimated cost, $2,000.

Puerto Posada—One group of six flashes every twelve seconds; acetylene; estimated cost, $2,000.

Aguadulce—One group of seven flashes every thirteen seconds; acetylene; estimated cost, $2,000.

Boca Brava—Ten seconds, light; ten seconds, dark; acetylene gas buoy; estimated cost, $3,000.

Boca San Pedro—0.3 seconds, light; 2.7 seconds, dark; acetylene gas buoy; estimated cost, $3,000.

The total estimated cost for all the lights recommended, with cost of launch, $4,000, and $4,200 for contingencies, is $100,000.

Sowing Grass Seed on Canal Banks.

The sowing of grass seeds of various kinds on the slopes of Culebra Cut to arrest erosion, has been begun on the dead slide on the west side of the Canal, about one-fourth of a mile south of Contractor's Hill. The material here is clay. The grass will be sown only on slides no longer in motion, and on sections of the bank not yet affected by slides.

Station Boards in Culebra Cut.

Following the plan of mile posts as a means of reference, used on railroads in the States, station boards have been placed every thousand feet through Culebra Cut for purposes of reference. There are 47 of these stations. Hereafter, daily reports of steam shovels and drill gangs will be made with reference to these station boards, and reports of accidents will also give location by this means.

Sailing of the "Cristobal."

The sailing of the Panama railroad steamship *Cristobal* has been set for Wednesday, July 12 at 5 p. m. from Pier 11, Cristobal.

Married.

On July 1, in Cristobal, James Hervey Kenneth Humphrey of Minneapolis, Minn., and Miss Natalie Mathilde Hine of Bay City, Mich., Rev. Carl H. Elliott officiating. Canal Zone residence, Corozal.

On July 1, in Cristobal, George Warren Butters and Miss Lucy Amelia Abrams, both of Somerville, Mass., Rev. Carl H. Elliott officiating. Canal Zone residence, Cristobal.

Tug Service to Porto Bello, Nombre de Dios, and Toro Point.

Effective June 26, the following schedule will be maintained between Dock 13, Cristobal, Nombre de Dios, Porto Bello, and Toro Point:

Tug *Reliance* will leave Dock 13 daily, except Sundays, at 7 a. m., with two barges for Nombre de Dios, returning at once with two barges to Gatun.

Tug *Mariner* will leave Dock 13 daily, except Sundays, at 9 a. m., with three barges for Porto Bello, returning to Gatun as soon as barges are loaded.

Tug *Porto Bello* will leave Dock 13 Saturdays at 9 a. m., light, for Porto Bello. This tug will leave Porto Bello, light, at 2 p. m., arriving at Dock 4, Colon, in time for passengers to catch train No. 7, leaving Colon at 4.35

Tug *Porto Bello* will leave Dock 13 Sundays at 7 p. m., for Porto Bello, returning at once.

Tug *Mariner* will leave Dock 13 daily, except Sundays, at 6.30 a. m., for Toro Point, returning at once.

Tug *Mariner* will leave Dock 13 Sundays at 9.30 a. m., for Toro Point, returning at once.

A tug will leave Dock 13 on Wednesdays, Saturdays, and Sundays, at 4.30 p. m., for Toro Point, returning at 5.30 p. m.

A tug will leave Dock 13 on the 20th of each month at 6 a. m., for Porto Bello and Nombre de Dios, returning to arrive at Dock 4, Colon, about 4.30 p. m.

The following vessels arrived at or departed from the port of Balboa during the week ending July 1:

Arrivals—June 25, *Barracouta*, from Central America; June 26, *Guatemala*, from Valparaiso; *Urubamba*, from Callao; June 30, *Peru*, from San Francisco; July 1, *Pleiades*, from San Francisco.

Departures—June 26, *Mantaro*, to Callao; June 27, *Quito*, to Guayaquil; June 29, *Aztec*, to San Francisco; *Palena*, to Valparaiso; *City of Panama*, to San Francisco; June 30, *Peru*, to Guayaquil.

CULEBRA CUT.

Status of the Excavation at Close of Fiscal Year.

At the close of the fiscal year, June 30, there had been excavated from the section of the Canal known as Culebra Cut, 65,514,865 cubic yards, and there remained to be dug 18,671,859 yards. This section is, therefore, 78 per cent completed. The advance of the work each year is shown in the following table:

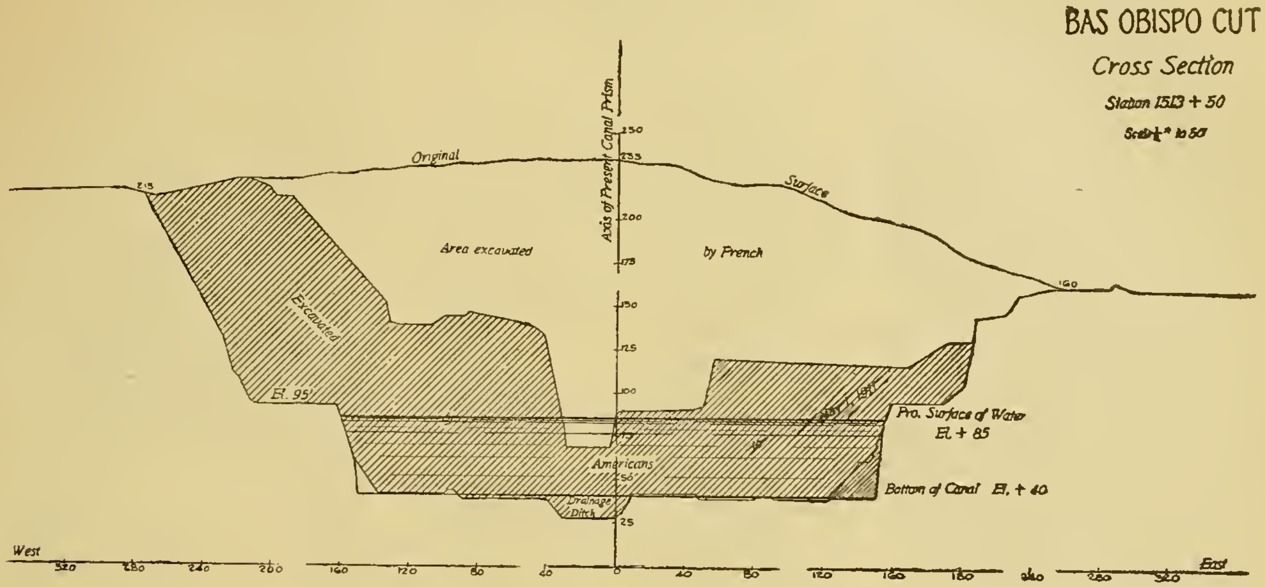
EXCAVATION.

Fiscal Year.	Cubic Yards.
1904 (2 months)	60,107
1905	741,644
1906	1,506,562
1907	5,768,014
1908	12,065,138
1909	14,229,978
1910	14,921,750
1911	16,221,672
Total	65,514,865

The amount of excavation has increased each year, and there has been an increase also in the average excavation per steam shovel, due to the increasing effectiveness of the working force, and a consequent decrease in the cost per cubic yard excavated. In the quarter ending March 31, the cost of excavation in the Central Division, which includes Culebra Cut, was 56.92 cents a cubic yard, while the cost for the whole period up to March 31, was 88.01 cents a cubic yard.

A section of the Cut that is practically completed is the rock excavation at Bas Obispo. At this point the French had been digging the emplacement for one of the locks on the three-level canal projected by the New Panama Canal Company. The digging was through a hill of trap rock. A cross section of the Canal at this point shows the excavation for the French locks, and the work done here by the Americans since 1904. All but a small bit of excavation at the toe of the east slope is completed, and this is represented in the illustration by the white triangle, at the lower left corner of the cross section. The section that is completed is about 600 feet in length, and for half a mile above this point, the work is merely a "clean-up job," on which three steam shovels are making shallow cuts. The old incline into the Canal at Bas Obispo on the east side is being dug out.

There has been less inconvenience from the sliding banks so far this rainy season than was anticipated. The longest of the slides, that at Cucaracha, is at rest, and a shovel cut has been made in front of it on the 95-foot berm, and has been maintained without difficulty. No new movements occurred at Culebra, up to July 1, where the lightening of the slides, by excavating them on top, is in progress.


BAS OBISPO CUT

Cross Section

Station 1513 + 50

PERSONAL.

A cable message from Washington states that the Secretary of War, and Mrs. Stimson, and Brigadier General C. R. Edwards will sail on the *Santa Marta* from New York for the Isthmus on July 6, and that the following members of the Panama Canal Fortification Board will sail for the Isthmus on the *Ancon* on July 10: Major General Leonard Wood, Brigadier Generals W. W. Wotherspoon and W. H. Bixby, Colonel Erasmus M. Weaver and Captain S. D. Embick of the Army, and Commander W. J. Maxwell of the Navy.

Captain J. C. Colwell, U. S. N., retired, and Lieut. Walter D. Smith and family, were among the passengers on the *Cristobal*, which arrived at Cristobal on July 2.

Examinations for Canal Service.

Examination will be held probably on July 30 for typewriter, and for stenographer and typewriter, Isthmian Canal Service. Request should be made for application form 304 and information in regard to the above examinations, the name of the examination for which it is desired to apply being stated. Applications should be filed before July 22.

Applications should be filled out carefully, and all instructions should be thoroughly understood beforehand. The following is to be noted in executing all applications for civil service examinations: In questions regarding *bona fide* residence, such residence does not require continuous bodily presence, but constitutes the place at which the applicant, if a voter, is legally entitled to vote.

JOHN K. BAXTER,
Secretary, Isthmian Civil Service Board.
CULEBRA, C. Z., June 28, 1911.

Promotion of Rodmen and Levelmen.

An examination to test the fitness of rodmen and levelmen for promotion will be held at Culebra on Sunday, July 16. Employes wishing to enter this examination should forward their applications through the head of the department or division in which they are serving, to Mr. A. B. Nichols, chairman of the examining board, Culebra.

Injury Pay for P. R. R. Employes.

The following resolution was adopted by the board of directors of the Panama Railroad Company on April 3, 1911:

"*Resolved*, That in every case where an employe of the Panama Railroad Company upon the Isthmus of Panama shall receive injuries in the course of such employment, which are not due, in the opinion of the president of the company, to the wilful misconduct or negligence of such employe, and such injuries shall result in his incapacity or death, there shall be paid to such employe, in event of incapacity, his regular pay for the period of incapacity, not to exceed one year, or, in event of his death, to his widow, child, or children under the age of sixteen years, or dependent parent or parents, his regular pay for the period of one year, deducting therefrom any payments made by reason of incapacity growing out of the same accident.

Application for such compensation shall be made by the employe, or, in event of his death, by his beneficiaries, upon approved forms, which shall show the date and character of the injury, and shall be supported by a certificate of the attending physician, showing the incapacity of such employe throughout the period for which compensation is claimed, or his death as the result of such injury, all of which shall receive the approval of the president of the company, or of an official to be designated by him; provided, however, that no compensation shall be paid except upon the execution by the injured employe, or by his beneficiaries in event of his death, of a release to the Panama Railroad Company of all liability to such employe, or beneficiaries, as the result of such injury or death."

SOCIAL LIFE OF THE ZONE.

Women's Clubs.

There will be a social meeting of the Gatun Woman's Club on Thursday, July 5. The club will then close, and the opening of the regular season will be in September.

The members of the Las Cascadas Euchre Club were entertained at the home of Mrs. Charles R. Lingo on Thursday, June 27. Beside the regular members, there were present a number of guests from Paraiso.

Church Notes.

The pastor of the Methodist Episcopal Church in Panama solicits donations of old magazines and periodicals for the prisons and asylums under his ministry. The pastor may be addressed at Ancon, or books and magazines may be delivered at the church on the sea wall in Panama.

At the Thursday evening meeting of the Pedro Miguel Song and Praise Association on June 29, the Rev. Harry Compton was the speaker. Following the service, the association tendered a reception to Mr. Compton as a welcome to the new pastor.

The Ladies' Auxiliary and the Ladies' Aid Society of the First Baptist Church of Empire united in tendering a reception, on Wednesday evening, June 27, to the pastor of the Baptist Church of Colon, and his wife, the Rev. and Mrs. Stephen Witt, who reside in Empire. Each society presented them with a gift.

The Southern Baptist Mission Board has made a grant of $3,000 toward the construction of a new church building at Cristobal, to replace the one destroyed by fire in March. It is proposed to construct a new building, with mission house attached, within the Canal Zone limits, and to reconstruct the ruins of the old concrete building for the schoolhouse. The school had an enrollment of 200 pupils. Services are being held in a temporary building which was purchased by the church immediately after the fire.

A mission service will be held in the Commission chapel in Empire on Sunday evening, July 30, under the auspices of the ladies' auxiliary of the Empire Christian League. The auxiliary will hold a missionary meeting at the chapel on Friday afternoon, July 7.

The Gatun Christian League held an election of officers on Thursday evening, June 29, when the following were chosen: President, W. N. Windes; vice-president, E. C. Ryles; secretary, W. H. Brown; treasurer, Mrs. Ben Jenkins.

The rector of Christ Church, Colon, entertained the Woman's Altar Guild at tea at the rectory on Friday afternoon, June 30.

Fraternal Organizations.

The Isthmian Canal Rebekah Lodge, No. 1, Independent Order of Odd Fellows, Gorgona, elected the following officers on Tuesday evening, June 23: Noble grand, Mrs. Marian Beetham; vice-grand, Mrs. Agnes Martin; secretary, Charles Beetham; financial secretary, Henry Lots; treasurer, Mrs. Annie L. Calvit. The appointive offices will be filled at the installation which will be held in July. Rebekah Lodge, No. 1, was organized on October 10, 1908, with 31 charter members. Officers are elected semiannually, the present election marking the opening of the sixth session.

Balboa Lodge, No. 4, Knights of Pythias, Las Cascadas, held a public installation of officers on July 3. The ceremony was followed by a dance and supper. On the same evening, Paradise Lodge, No. 6, Paraiso, held its installation and third anniversary dance at the lodge hall.

The Masonic Club of Empire held its meeting on Tuesday evening, July 27, when the speakers were Mr. Gibbs of the Texas Oil Company, who spoke on oil; Mr. McCombs of the International Banking Company in Empire, who spoke on banking; and Mr. Christopherson of the Canal Zone high school, who spoke on the flora and fauna of the Isthmus. On Sunday morning, June 25, the Masonic club attended the service at the Commission chapel, when the Rev. A. A. Nellis delivered the address. About 100 Masons were present.

Resolutions of sympathy have been adopted by Paradise Lodge, No. 6, Knights of Pythias, Paraiso, on the death of Mary Enola, the young daughter of Thomas L. Kent, which occurred on June 3.

School Notes.

The pictures and art folios belonging to the Canal Zone Federation of Women's Clubs were on exhibit at the Gorgona school for two weeks in June. During this time talks on art were given, the pictures being used as illustrations. Instruction in art in connection with the English course in the grade schools is projected for the coming year.

The juniors of the Canal Zone High School held a promenade on Thursday afternoon, June 29, in the entertainment hall of the Commission clubhouse.

The Canal Zone public schools closed on Friday, June 30, and will reopen on October 2.

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal, Colon, and Balboa, during the week ending July 1:

Prinz Joachim, June 26, from New York, with 200 barrels kerosene, 20 cases paper, for stock.

Border Knight, June 26, from New York, with 3,005 barrels cement for Atlantic and Pacific Divisions.

Alm, June 28, from Baltimore, with 400 pieces angle reinforcements for Atlantic Division; 29,363 cases dynamite, for stock.

Atenas, June 29, from New Orleans, with 2,260 bales prairie hay, 38,407 feet white oak lumber, 20 packages lantern globes, 12 cases paint, 9 crates ink and mucilage, for stock.

Panama, June 30, from New York, with 600 tower knuckles for Mechanical Division; 8 cases fire hose for Department of Civil Administration; 5 cases dipper bails for Central Division; 22 cases drugs and sundries for Sanitary Department; 47 drums marine engine oil; 500 kegs white lead in oil; 25 cases ink, 10 cases steel nut locks, 13 cases insulated wire, 200 cases washing powder, 17 cases incandescent lamps, for stock; and a miscellaneous cargo, the whole consisting of 1,552 packages, weighing 125 tons.

Zacapa, June 30, from New York, with 6 cases electric laundry material for Sanitary Department; 15 cases machinery, 100 coils Manila rope, for stock.

Belle of Spain, July 1, from Tacoma, with 354,631 feet Douglas fir lumber for stock.

Prin Eitel Friedrich, July 1, from New York, with 100 kegs nails, 200 cases electric fuses for stock.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Hotel Tivoli on Sunday, July 9, at 7:30 p. m. The program follows:

1	March—*The Conciliator*	Scouton
2	Selection—*The Girl of My Dreams*	Hoschna
3	Waltz—*Campus Dreams*	Blke
4	Intermezzo—*The Dawn of Love*	Benaix
5	Overture—*Norma*	Bellini
6	Popular Number—*On, Wisconsin*	Purdy
7	Selection—*Robin Hood*	De Koven
8	Idyl—*Garden of Roses*	Pratt
9	March—*Monstrat Viam*	Joy

OLIVER KIMBALL, *Acting Musical Director.*

The next concert will be given at Empire on Sunday, July 16.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CULEBRA.

The high duckpin scores for last week were, as follows: Huttlemaier, 101, 111, 119, 103, 114, 107, 100, 101, 105, 108; Mengel, 113, 104, 102; Silver, 102; Case, 106, 105, 115, 103.

The Culebra Boy Scouts took a "hike" last week to the old city of Panama.

An informal social was held on Wednesday evening, June 28, when a musical and literary program was rendered.

EMPIRE.

The following high scores were rolled in duckpins during the past week: Witmer, 113; Goolsby, 112; Rodeghiero, 104, 100, 104, 102; Ground, 100.

At a meeting held on Monday night, July 3, plans were made for a local handicap tenpin tournament. All tenpin bowlers are urged to take part in this tournament.

The basketball men are practising two nights a week. Enough men have reported for two teams, and it is hoped that enough more will come out, so as to make possible a local basketball league.

The regular gymnasium class work will start the week of July 9, meeting twice weekly. The regular meeting of the Empire Literary Society will be held on Friday, July 7. The "Income tax" will be discussed.

GATUN.

It has been decided by the athletic committee, of which Fred Huber is chairman, to organize a local basketball league. Eighteen men were out for practice on June 27. It is expected that there will be five teams in the league. Any man in Gatun is eligible to attend the practice games.

A class in wrestling will be started this week under the direction of Messrs. Huber and Wilson.

The motion picture entertainment on Monday, June 26, was unusually well attended.

The literary club met on Wednesday evening, June 28. The subject for discussion was "Resolved, that the railroads of the United States should be owned and operated by the Federal Government." Messrs. Fox, Wilson, and Baite spoke in the affirmative, and Messrs. Gilkey, Smita, Huber, and Dougherty spoke in the negative. R. E. Chatfield, presided.

The following is a list of the 12 highest bowlers in duckpins for the last half of June:

NAME.	Games.	Pinfalls.	Aver.
Atkins	4	370	93
DePoorter	2	182	91
Barte	30	2703	90
DeMoll	4	354	88
Wells	24	2098	87
Dalton	5	438	87
Bailey	12	1035	86
Dillon	5	430	86
Wurster	28	2399	85
Zeal	40	3345	84
Green	15	1261	84
Rosselot	42	3501	83

Dr. Orenstein will give the second of a series of three talks on "Sex life" on Sunday evening, July 9, in the game room.

CRISTOBAL.

The Cristobal association held its fourth anniversary banquet at the Cristobal hotel on Thursday evening, June 29. Dr. Claude C. Pierce acted as toastmaster, and the following program was given: Invocation by Rev. C. H. Elliott; address, "Four years' old," by F. C. Freeman; baritone solos by W. G. Ross; address, "Our country," by C. J. Dinnin; historical sketch, "The early history of the Panama railroad," by J. A. Smith; remarks by E. A. Putnam; song, "Star Spangled Banner." Music was furnished throughout the evening by the Panama railroad orchestra. About 200 men were present. The banquet committee consisted of Messrs. C. M. Bullard, W. H. Marsh, R. C. Mosher, J. M. Weaver, and R. G. Goodman.

E. A. Putman will succeed R. G. Goodman as secretary of the Cristobal association, who has resigned, effective August 1.

PORTO BELLO.

Thursday afternoon has been set apart for the ladies. During the past few weeks quoit tournaments have taken place among them, there being ten participants.

A motion picture machine has been installed in the clubhouse, and, as soon as arrangements are completed, a show will be held every week or two.

The Porto Bello chess club's handicap tournament is about half completed. The membership is being lowered by the transfer of men. Twenty-eight moves have been made in the tournament by wireless with Culebra.

LOST—On June 28, between Empire and Toro Point, a circular piece of jade set with two Chinese letters in gold. Reward on return to F. Weitzenberg Empire.

COMMISSARY DEPARTMENT.

The hours during which the commissaries are open are, as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning July 1.

FRESH MEATS.	*Price.*
Mutton—Stewing per pound	6
Shoulder, neck trimmed off, (4 pounds and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing, per pound	10
Shoulder, for roasting (not under 4 pounds), per pound	12½
Chops, shoulder, per pound	16
Chops, per pound	24
Loin, for roasting, per pound	24
Cutlets, per pound	28
Pork—Loin chops or roast, per pound	*14
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	8
Corned, No. 1, per pound	12
Corned, No, 2, per pound	10
Chuck roast (3 pounds and over), per pound	12
Pot roast, per pound	12½
Rib roast, second cut (not under 3½ pounds), per pound	16
Rib roast, first cut (not under 3 pounds), per pound	18
Sirloin roast, per pound	19
Rump roast, per pound	19
Porterhouse roast, per pound	20
Steak, chuck, per pound	12½
Round, per pound	13
Rib, per pound	18
Sirloin, per pound	19
Rump, per pound	19
Porterhouse (not less than 1½ pounds), per pound	20
Tenderloin (Western), per pound	24
MISCELLANEOUS.	
Caviare, Russian per tin	47, 89
Livers—Beef, per pound	7
Calf, each	60
Half, each	30
Sausage—Pork, per pound	17
Bologna, per pound	10
Frankfurter, per pound	12
Lieberwurst, per pound	10
Devonshire Farm	17
Sweetbread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	24
one-half dozen only	13
Bluefish, fresh, per pound	14
Halibut, fresh, per pound	15
Shads, fresh, each	70
Shad roes, fresh, per pair	35
POULTRY AND GAME.	
Chickens—Fancy roasting, milk fed, large, each	1.25
Fancy roasting, milk fed, med., each	1.00
Fancy roasting, corn fed, about 4½ pounds, each	90
Fowls, each	60, 70, 80, 90, 1.00
Ducks, Western, about 4½ pounds, each	1.00
Broilers, milk fed, each	60
corn fed, each	55
Turkeys, per pound	26
Squabs, each	35
Capons	2.10
Fryers, corn fed	60
Partridges, each	50
Grouse, each	50
CURED AND PICKLED MEATS.	
Ham—German, Westphalia, per pound	36
Sugar cured, per pound	18
Sliced, per pound	†20
Half, for boiling, per pound	†19
Boiled, per pound	22
Hocks, per pound	‡8
Bacon—Breakfast, whole piece, per pound	22
Breakfast, sliced, per pound	23
Pork salt family, per pound	14
Ox Tongues each	1.00
Pig's feet, per pound	9
Tongues, per pound	14
Sliced bacon in 1-pound tins, per tin	30
In 1-pound jars, per jar	30
DAIRY PRODUCTS.	
Butter—Creamery special, per pound	*30
Cheese—Roquefort, per pound	38
Philadelphia cream, cake	18
Young America, per pound	18
Swiss, per pound	26
Edam, each	1.00
Edam, in tins, tin	25
Camembert, in small tins, tin	14
Neufchatel, cake	6
Gouda, per pound	34
	Price.
Milk (Certified), per bottle	**25
Buttermilk, bottle	**15
Ice cream, quart	‡25
½-gallon	‡50
VEGETABLES AND FRUITS.	
Beets, per pound	6
Celery, per head	10
Corn, green, per doz	24
Cabbage, per pound	†4
Cucumbers, per pound	10
Egg plant, per pound	07
Lettuce, per pound	10
Onions, per pound	5
Potatoes, white, per pound	†3½
sweet, per pound	2
Peppers, green, per pound	10
Rhubarb, per pound	5
Tomatoes, per pound	8
Yams, per pound	3
Apples, fancy table, per pound	10
Cantaloupes, each	7
Lemons, dozen	24
Limes, per 100	80
Oranges, Jamaica, per dozen	12
Oranges, California, per dozen	36
Watermelons, each	*30

*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Rainfall from June 1 to June 30, 1911, Inclusive.

Stations.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	.84	6	3.40
Balboa	1.00	28	4.23
*Miraflores	.87	6	3.71
Pedro Miguel	1.97	22	5.52
Rio Grande	.58	26	4.03
Central Section—			
Culebra	.70	26	4.25
*Camacho	1.00	26	4.62
Empire	1.32	26	5.92
Gamboa	.96	23	6.98
*Juan Mina	1.47	26	9.12
Alhajuela	2.70	9	10.53
*El Vigia	3.58	9	12.11
*Gorgona	1.68	9	7.21
San Pablo	1.35	13	5.47
Tabernilla	1.22	9	4.81
Bohio	1.45	23	6.96
*Trinidad	1.93	9	8.79
*Monte Lirio	1.79	2	11.43
Atlantic Section—			
Gatun	2.38	1	14.72
*Brazos Brook	2.24	27	16.10
Cristobal	2.70	19	15.58
Porto Bello	2.97	27	18.04
*Nombre de Dios	3.02	27	12.65

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, July 1, 1911. All heights are in feet above mean sea level.

Day and Date.	Station.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun., June 25	128.1	94.2	47.4	18.0	17.6
Mon., June 26	128.5	94.6	48.2	17.6	17.4
Tues., June 27	127.7	94.2	48.2	17.5	17.0
Wed., June 28	129 0	94.8	48.1	17.1	17.0
Thurs., June 29.	133.0	97.5	50.8	17.7	16.9
Fri., June 30	127.6	93.9	47.0	17.1	16.8
Sat., July 1	127.2	93.4	46.3	16.6	16.6
Height of low water	125.0	92.0	44.0		

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending July 12, 1911, (75th meridian time):

Date.	High.	Low.	High.	Low.	High.
	A.M.	A.M.	A.M.	P.M.	
July 6	......	5.48	11.57	6.26	......
			P.M.		
July 7	12.48	6.50	12.56	7.23	......
July 8	1.49	7.47	1.50	8.13	......
July 9	2.40	8.37	2.37	8.58	......
July 10	3.21	9.10	3.18	9.40	......
July 11	3.57	10.02	3.57	10.18	......
July 12	4.29	10.38	4.35	10.54	......

OFFICIAL CIRCULARS.

Board of Local Inspectors.

Culebra, C. Z., June 28, 1911.

Mr. D. R. Aitken,
Balboa, C. Z.

Sir: Under authority conferred upon me by Executive Order of the President, No. 1131, dated October 2, 1909, you are hereby appointed a member of the Board of Local Inspectors, to serve during the absence on leave of Mr. James Macfarlane.

Respectfully,
Geo. W. Goethals, *Chairman.*

Use of Government Tugs.

Culebra, C. Z., June 27, 1911.

Lieut.-Col. W. L. Sibert, *Division Engineer, Gatun.*
Mr. S. B. Williamson, *Division Engineer, Corozal.*
Mr. J. A. Smith, *General Superintendent, Colon.*

Gentlemen: In accordance with the recommendations contained in report of committee, dated May 23 and approved May 29, I have this day addressed a communication, reading, as follows:

"The Isthmian Canal Commission and the Panama Railroad Company are now allowing the shipping interests the use of their respective tug boats as an accommodation, and at a very moderate charge for the service rendered. In consequence, I have to advise you that such service may be obtained hereafter by your Company only upon the understanding that your Company assumes all risks of injury or damage to your Company's vessels, their equipment, or cargo, while such vessels are being handled by the tug boats of the Commission or the Panama Railroad Company, and that no liability for such injury or damage will attach to the United States, or the Panama Railroad Company. Please advise me of your assent to this condition."

To the following:

Mr. H. B. Parker, General Agent, Royal Mail Steam Packet Company, Colon.
Mr. A Schang, Acting Agent, Compagnie Gènèrale Transatlantique, Colon.
Mr. Paul Miller, Agent, Hamburg-American Line, Colon.
Mr. J. Fidanque, General Agent, La Veloce, Colon.
Mr. I. R. Garcia, Agent, Cia. Transatlantica de Barcelona, Colon.
Capt. W. L. Alley, Agent, United States Sbipping Company, Colon.
Mr. H. R. Wilford, Agent, United Fruit Company, Colon.
Mr. A. C. Parke, Agent, Pacific Mail Steamship Company, Balboa.
Mr. C. S. Peebles, Agent, Pacific Steam Navigation Company, Balboa.
Mr. P. L. Fellinger, Agent, Peruvian Line, Balboa.
Mr. James Stokoe, Special Agent, Union Oil Company, Balboa.
American Trade Developing Company, Agents, Kosmos Line, Balboa.
Messrs. Pinel Brothers, National Navigation Company, Balboa.
The Panama Agencies Company, representing W. R. Grace & Company, Balboa.
Messrs. Bates & Chesebrough, General Agents, California-Atlantic S. S. Company, Balboa.
Messrs. Ehrman & Company, Agents, Cia. Sud-Americana de Vapores, Balboa.
Panama Railroad Company, Agents, Earn Line S. S. Company, Colon.
Messrs. W. Andrews & Company, Agents, West India S. S. Company, Munson Line, and Leyland & Harrison Lines, Colon.
Mr. R. Wilcox, owner of schooners, Colon.
Mr. M. A. de Leon, owner of schooners, Colon.
Captain W. L. Alley, owner of schooners, Colon.
Mr. D. L. Lynton, owner of schooners, Colon.
Mr. W. O. Forde, owner and agent of schooners, Colon.

If there are any other individuals or companies to whom copies of this notice should be sent, please advise me at once.

Until the conditions specified in the notice are accepted by the individuals and companies to whom same has been addressed, the furnishing of tug service to them will be on the alternative basis recommended by the committee above referred to, to-wit:

"That tug boat service not in conformity therewith (as contained in notice above) shall be furnished only after an agreed price is arranged, based on the condition of service called for and the marine risks apparent to the party under whose jurisdiction the tug service is operated."

Respectfully,
Geo. W. Goethals,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Lost—A Delta Phi Nu fraternity pin, with skull and cross bones, ruby eyes. Return to R. L. Sommerville, Pedro Miguel.

CANAL DIRECTORY.

ISTHMIAN CANAL COMMISSION.

Col. Geo. W. Goethals, U. S. A., Chairman, Culebra.
Lieut.-Col. H. F. Hodges, U. S. A., Culebra.
Lieut.-Col. D. D. Gaillard, U. S. A., Empire.
Lieut.-Col. Wm. L. Sibert, U. S. A., Gatun.
Civil Engineer H. H. Rousseau, U. S. N., Culebra.
Col. W. C. Gorgas, U. S. A., Ancon.
Mr. Maurice H. Thatcher, Ancon.
Mr. Joseph Bucklin Bishop, Secretary, Ancon.

DEPARTMENTS.

Construction and Engineering.

Headquarters, Culebra.

Col. Geo. W. Goethals, Chairman and Chief Engineer.
William Howard May, Secretary to the Chairman.
C. A. McIlvaine, Chief Clerk.
John K. Baxter, Assistant Chief Clerk.
Ad. Faure, Chief Accountant.
H. S. Farish, Surveying Officer.
Caleb M. Saville, Assistant Engineer.

Lieut.-Col. H. F. Hodges, Assistant Chief Engineer.
C. O. Carlson, Secretary.
Edward Schildhauer, Electrical and Mechanical Engineer.
Henry Goldmark, L. D. Cornish, T. B. Mönniche, Designing Engineers.

Civil Engineer H. H. Rousseau, Assistant to the Chief Engineer.
J. C. Parsons, Secretary.
Maj. T. C. Dickson, U. S. A., Inspector of Shops.
A. B. Nichols, Office Engineer.
James G. Craig, Senior Traveling Engineer.
Arthur C. Stone, D. E. Irwin, Traveling Engineers.

Central Division.

Headquarters, Empire.

Lieut.-Col. D. D. Gaillard, Division Engineer.
W. I Beam, Chief Clerk.
A. E. Bronk, General Inspector.
A. S. Zinn, Resident Engineer.
Mark W. Tenny, Assistant Engineer.
J. W. Sneed, Superintendent Construction
J. M. Hagan, Superintendent Construction.
Joseph Little, Superintendent Construction
W. T. Reynolds, Superintendent Construction.
A. Sessions, Superintendent Transportation.
William H Bates, Supt. Steam Shovel Repairs.
Dan E. Wright, Supt. Municipal Work and Pipe Lines.

Atlantic Division.

Headquarters, Gatun.

Lieut.-Col. Wm. L. Sibert, Division Engineer.
Maj. Chester Harding, U. S. A., Assistant Division Engineer.
R. M. Sands, Chief Clerk.
Maj. J. P. Jervey, U. S. A., Resident Engineer.
Maj. G. M. Hoffman, U. S. A., Resident Engineer.
Geo. M. Wells, Office Engineer.

Pacific Division.

Headquarters, Corozal.

S. B. Williamson, Division Engineer.
John M. G. Watt, Assistant Division Engineer
J. C. Keller, Chief Clerk.
W. G. Comber, Resident Engineer.
H. O. Cole, Resident Engineer.
Frank Cotton, Assistant Engineer.
H. D. Hinman, Assistant Engineer.
James Macfarlane, Supt. of Dredging.

Mechanical Division.

Headquarters, Gorgona.

A. L. Robinson, Superintendent.
William Taylor, Chief Clerk.

Subsistence.

Headquarters, Cristobal.

Maj. Eugene T. Wilson, U. S. A., Subsistence Officer.
Capt. Frank O. Whitlock, U. S. A., Assistant Subsistence Officer.
W. F Shipley, Chief Clerk.
John Burke, Manager of Commissaries.

Quartermaster's.

Headquarters, Culebra.

Lieut.-Col. C. A. Devol, U. S. A., Chief Quartermaster.
Capt. R. E. Wood, U. S. A., Assistant Chief Quartermaster.
Lieut. Walter D. Smith, U. S. A., Constructing Quartermaster.
C. H. Mann, Chief Clerk.
Capt. C. Nixon, U. S. A., Depot Quartermaster, Mount Hope.
C. L. Parker, Assistant Depot Quartermaster, Mount Hope.
Chas. R. Bryon, Storekeeper, Gatun.
R. K. Morris, Storekeeper, Gorgona.
D. H. Beaman, Storekeeper, Empire.
Robert Wuerz, Storekeeper, Miraflores.
X. D. Holt, Storekeeper, Balboa.

District Quartermasters.

B. C. Poole, Ancon and Balboa.
J. H. K. Hunphreys, Corozal and Miraflores.
J. T. Smith, Pedro Miguel and Paraiso.
H. F. Sedwick, Culebra.
W. G. Ross, Empire.
J. M. King, Las Cascadas and Bas Obispo.
R. C. Shady, Gorgona.
O. S. Farrar, San Pablo, Mamei, Tabernilla and Bohio.
R. M Gamble, Gatun.
Roy R. Watson, Cristobal and Toro Point.
Chas D. Morgan, Porto Bello and Nombre de Dios.

Civil Administration.

Headquarters, Ancon.

Maurice H. Thatcher, Head of the Department.
G. A. Ninas, Chief Clerk.
C. L. Luedtke, Assistant Chief Clerk.
Tom M. Cooke, Chief, Division of Posts, Customs and Revenues, Ancon.
Arthur McGown, Deputy Collector, Ancon.
Jno. L. Storla, Deputy Collector, Cristobal.
J. P. Fyffe, Chief of Police, Ancon.
Capt. Chas. W Barber, U. S. A., Assistant Chief of Police, Ancon.
C. E. Weidman, Fire Chief, Cristobal.
Chas. F. Koerner, Assistant Fire Chief, Cristobal
M. E. Gilmore, Supt. Public Works, Ancon.
F. A. Gause, Superintendent of Schools, Ancon.
Edgar P. Beck, Treasurer of Canal Zone, Empire.
W. G. Comber, Chairman; James Macfarlane. C. J. Anderson, Board of Local Inspectors.

Canal Zone Judiciary.

Headquarters, Ancon.

Supreme Court—H. A. Gudger, Chief Justice.
Walter Emery, Clerk, Ancon.
Thomas E. Brown, Jr., Associate Justice.
Circuit Court, First Circuit—H A. Gudger, Judge, Ancon.
Walter Emery, Clerk.
Circuit Court, Second Circuit—(——— ———)
Elbert M. Goolsby, Clerk.
Circuit Court, Third Circuit—Thomas E. Brown, Jr.
Nelson R. Johnson, Clerk, Cristobal
William H. Jackson, Senior District Judge, Ancon.
M. C. Rerdell, District Judge, Cristobal.
S. E. Blackburn, District Judge, Ancon
Edgar S. Garrison, District Judge, Empire.
J. B. March, District Judge, Gorgona.

Law.

Headquarters, Ancon.

Frank Feuille, Counsel and Chief Attorney.
William K. Jackson, Prosecuting Attorney.
Chas. L. Williams, Assistant Prosecuting Attorney.

Sanitation.

Headquarters, Ancon.

Col. W. C. Gorgas, Chief Sanitary Officer.
Lieut.-Col. John L. Phillips, U. S. A., Assistant Chief Sanitary Officer.
Maj. Robert E. Noble U. S. A., General Inspector.
Harry E. Bovay, Chief Clerk.

Lieut.-Col. Charles F. Mason, U. S. A., Superintendent Ancon Hospital, Ancon.
Surgeon Wm. H. Bell, U. S. N., Superintendent Colon Hospital, Cristobal.
Surgeon J. C. Perry, P. H. and M. H. S., Chief Quarantine Officer, and Health Officer, Panama.
Surgeon Claude C. Pierce, P. H. and M. H. S. Quarantine Officer, Colon.
Dr. Fleetwood Gruver, P. H. and M. H. S., Quarantine Officer, Panama.
Joseph A. LePrince, Chief Sanitary Inspector. Ancon.
Dr. M. E. Connor, Health Officer, Colon.

Disbursements.

Headquarters, Empire.

Edward J. Williams, Disbursing Officer.
Wm. M. Wood, Assistant Disbursing Officer.

Examination of Accounts.

Headquarters, Empire.

H. A. A. Smith, Examiner of Accounts.
T. L. Clear, Assistant Examiner of Accounts.

Purchasing Department.

Headquarters, Washington, D. C.

Capt. F. C. Boggs, U. S. A., General Purchasing Officer.
C. E. Dole, Chief Clerk.

Capt. Courtland Nixon, Purchasing Agent on the Isthmus.
Maj. Wendell L. Simpson, U. S. A., Assistant Purchasing Officer, 24 State Street, New York City.
Lieut-Col. Geo. B. Davis, U. S. A., Assistant Purchasing Agent, 55 National Realty Building, New Orleans, La.

Panama Railroad Company.

Headquarters, Colon.
(General offices, 24 State Street, New York.)

J. A. Smith, General Superintendent, Colon,
R. L. Mock, Chief Clerk.
Lieut. Frederick Mears, U. S. A., Chief Engineer.
A. K. Stone, Master of Transportation.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to changes.

NEW YORK TO CRISTOBAL.

Allianca	P. R. R.	Thursday	July 13
Panama	P. R. R.	Wednesday	July 19
Advance	P. R. R.	Tuesday	July 25
Colon	P. R. R.	Monday	July 31
Allianca	P. R. R.	Saturday	Aug. 5
Panama	P. R. R.	Saturday	Aug. 12
Advance	P. R. R.	Friday	Aug. 18
Colon	P. R. R.	Thursday	Aug. 24
Allianca	P. R. R.	Wednesday	Aug. 30
Panama	P. R. R.	Tuesday	Sept. 5

CRISTOBAL TO NEW YORK.

Panama	P. R. R.	Thursday	July 6
Advance	P. R. R.	Wednesday	July 12
Cristobal	P. R. R.	Wednesday	July 12
Colon	P. R. R.	Wednesday	July 19
Allianca	P. R. R.	Tuesday	July 25
Panama	P. R. R.	Monday	July 31
Advance	P. R. R.	Sunday	Aug. 6
Colon	P. R. R.	Saturday	Aug. 12
Allianca	P. R. R.	Friday	Aug. 18
Panama	P. R. R.	Thursday	Aug. 24
Advance	P. R. R.	Wednesday	Aug. 30
Colon	P. R. R.	Tuesday	Sept. 5

NEW YORK TO COLON.

Prinz Aug. Wilhelm	H.-A.	Saturday	July 1
Santa Marta	U. F. C.	Thursday	July 6
Prinz Sigismund	H.-A.	Friday	July 7
Clyde	R. M.	Saturday	July 8
Metapan	U. F. C.	Thursday	July 13
Prinz Joachim	H.-A.	Saturday	July 15
Zacapa	U. F. C.	Thursday	July 20
Prinz Eitel Friedrich	H.-A.	Friday	July 21
Atrato	R. M.	Saturday	July 22
Almirante	U. F. C.	Thursday	July 27
Prinz Aug. Wilhelm	H.-A.	Saturday	July 29
Santa Marta	U. F. C.	Thursday	Aug. 3
Prinz Sigismund	H.-A.	Friday	Aug. 4
Thames	R. M.	Saturday	Aug. 5

COLON TO NEW YORK.

Zacapa	U. F. C.	Thursday	July 6
Prinz Eitel Fredrich	H.-A.	Saturday	July 8
Atrato	R. M.	Tuesday	July 11
Almirante	U. F. C.	Thursday	July 13
Prinz Aug. Wilhelm	H.-A.	Tuesday	July 18
Santa Marta	U. F. C.	Thursday	July 20
Prinz Sigismund	H.-A.	Saturday	July 22
Thames	R. M.	Tuesday	July 25
Metapan	U. F. C.	Thursday	July 27
Prinz Joachim	H.-A.	Tuesday	Aug. 1
Zacapa	U. F. C.	Thursday	Aug. 3

NEW ORLEANS TO COLON.

Turrialba	U. F. C.	Saturday	July 1
Abangarez	U. F. C.	Saturday	July 8
Atenas	U. F. C.	Saturday	July 15
Turrialba	U. F. C.	Saturday	July 22
Abangarez	U. F. C.	Saturday	July 29
Atenas	U. F. C.	Saturday	Aug, 5

COLON TO NEW ORLEANS.

Atenas	U. F. C.	Thursday	July 6
Turrialba	U. F. C.	Thursday	July 13
Abangarez	U. F. C.	Thursday	July 20
Atenas	U. F. C.	Thursday	July 27
Turrialba	U. F. C.	Thursday	Aug. 3
Abangarez	U. F. C.	Thursday	Aug. 10

Hamburg-American steamers leave Colon for New York via Kingston at 10 a. m. on sailing dates. The *Prinz August Wilhelm* and *Prinz Joachim* call at Santiago de Cuba, on both outward and homeward voyages. A ship will leave Colon for Bocas del Toro at 5 p. m. on July 12, and August 9; and for Port. Limon at 5 p. on July 12, July 26, and August 9.

The Leyland line steamer *William Cliff* sails for New Orleans, via Port Limon, on or about July 29.

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships for New York via Kingston on Thursday at 11 a. m.; for Bocas del Toro on Monday at 6 p. m.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, JULY 12, 1911. No. 46.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Slides in Culebra Cut.

On July 4, a mass of earth and soft rock on the east side of Culebra Cut at Culebra, immediately north of Gold Hill, fell into the Cut, and so covered steam shovel No. 225 that only the end of the boom is sticking out of the mass. The movement occurred early in the morning, and no one was injured by it. It is not known how badly the shovel was damaged, because it is not yet freed from the slide. Another steam shovel is excavating the material to the end that shovel No. 225 may be extricated.

On July 10, the mud slide on the east side of the Cut at Las Cascadas, having become saturated by the rain, moved into the Canal prism, blocking all tracks on the east side of the center drainage ditch, and thus reducing the output from the north end of the Cut.

The total amount of material in motion, or about to move, into Culebra Cut, does not exceed the estimate of excavation yet to be done there, as indicated elsewhere in this issue.

Freshet of July 5 and 6.

On July 5 and 6, a freshet in the Chagres River reached the following elevations:

DATE.	Station.	Low water.	Rise began.	Crest.	Height. Feet.
July 5.	Vigia.......	125.0	A.M. 11.30	P.M. 7.00	141.4
July 5.	Alhajuela....	92.0	2.10	8.00	103.0
July 6.	Gamboa.....	44.0	3.00	A.M. 12.45	58.3
July 6.	Bohio.......	......	P.M. 5.00	8.00	22.9
July 7.	Gatun.......	......	8.00	P.M. 7.00	19.4

The estimated discharge at Alhajuela, at the crest, was 37,200 cubic feet a second, and at Gamboa, 34,500 cubic feet a second.

Canal Work in June.

The grand total of Canal excavation to July 1 was 142,967,554 cubic yards, leaving to be excavated 39,570,212 cubic yards, or less than one-fourth of the entire amount for the completed Canal.

The total for June was 2,646,442 cubic yards, as compared with 2,616,609 cubic yards in June, 1910, and 2,895,793 cubic yards in June, 1909. All the excavation was "work excavation," there being no "plant excavation."

The dry excavation amounted to 1,588,388 cubic yards. and was principally by steam shovels. The dredges removed 1,028,198 cubic yards, and 29,856 cubic yards were sluiced, in addition to the amount pumped into Gatun Dam by suction dredges. The progress on the locks at Gatun, Pedro Miguel, and Miraflores is referred to elsewhere in this issue.

In the Atlantic Division, the total excavation was 516,095 cubic yards. Of this total, 63,997 cubic yards were dry excavation, and the remainder was removed by the dredges in the Atlantic entrance.

The total excavation in the Central Division was 1,433,304 cubic yards, all of which was from the prism.

In the Pacific Division, the total excavation was 697,043 cubic yards. 522,242 cubic yards of which were taken out by the dredges at the Pacific entrance, and 53,858 by the hydraulic excavation plant at Miraflores Locks.

A detailed statement of the excavation, and a summary of the work on the locks and dams, follow:

ATLANTIC DIVISION.

LOCALITY.	"Work." Excavation.	"Plant." Excavation.	Total excavation.
Dry excavation—	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*
Locks, Dam and Spillway..................	4,840	....	4,840
Mindi...................	59,157	....	59,157
Total................	63,997	....	63,997
Wet excavation—			
Atlantic entrance	452,098	....	452,098
Locks, Dam and Spillway..................	....	....	....
Total................	452,098	....	452,098
Total wet and dry excavation.........	516,095	....	516,095
CENTRAL DIVISION.			
Dry excavation—			
Culebra Cut.............	1,401,016	....	1,401,016
Chagres section........	2,432	....	2,432
Wet excavation—			
Chagres section........	29,856	....	29,856
Total	1,433,304	....	1,433,304
PACIFIC DIVISION.			
Dry excavation—			
Locks, Dams and Spillways............	45,477	....	45,477
Diversions.............	....	....	....
Prism, south of Pedro Miguel Locks........	75,466	....	75,466
Total....	120,943	....	120,943
Wet excavation—			
Pacific entrance	576,100	....	576,100
Miraflores Locks......	....	....	....
Total................	576,100	....	576,100
Total wet and dry excavation.........	697,043	....	697,043
TOTAL CANAL EXCAVATION.			
Dry excavation	1,588,388	....	1,588,388
Wet excavation	1,058,054	....	1,058,054
Total....	2,646,442	....	2,646,442

Mean rainfall along Canal (twelve stations) 7.14 inches.

By "Work" Excavation is meant excavation actually made for one of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc.; that is, it represents material taken from the area to be occupied by the Canal, and constitutes excavation useful for the completed Canal.

By "Plant" Excavation is meant excavation outside of any of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc. It includes material necessary to be excavated for construction purposes only and is chargeable against the particular plant item for which it is performed, such as Prism, Diversions, Locks, etc.

DAM AND LOCK CONSTRUCTION.

MATERIAL.	Atlantic.	Pacific.	Total.
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*
Concrete laid in locks.	55,305	44,779	100,084
Concrete laid in dams and spillways.......	4,830	....	4,830
Fill placed in dams....	660,004	82,173	742,177

Construction of Naos Island Breakwater.

During June, an average of about 1,000 cubic yards of material from Culebra Cut was dumped on the Naos Island breakwater. In order to complete the breakwater to the island before the spoil available from Culebra Cut will be exhausted, it will be necessary to dump on an average about 3,500 cubic yards daily. A committee has been appointed to determine upon a method of accomplishing this end, consisting of Messrs. S. B. Williamson, W. G. Comber, M. W. Tenny, and W. T. Reynolds, representing the Pacific and Central Divisions.

Draining Culebra Cut Through Pedro Miguel Locks.

Drainage from the south end of Culebra Cut will, henceforth, pass through the culvert in the center wall of Pedro Miguel Locks. Excavation was completed on July 12, connecting the pioneer shovel cut in the south end of Culebra Cut with the culvert at elevation 28 feet above sea level, 12 feet below the bottom of the Cut. All the water drained south from the summit between Culebra and Empire, which heretofore has passed through the site of Pedro Miguel dam, will pass through the culvert, which has a diameter of 18 feet. This will ensure quick drainage of the Cut, and will also enable the Pacific Division forces to complete the dam, work on which could not be finished while the drainage was passing through the site.

Compressed Air Leakage.

A series of tests has been made of the air mains in the Central and Pacific Divisions to determine the amount of waste from all causes, and the proportionate share of the cost that should be borne by each division. It was found that there was practically no leakage in the main between the Rio Grande compressor, and the beginning of the Pacific Division lines. On June 11, a test of all the mains and laterals showed a total loss of air of 24.89 per cent on the basis of the output for May, of which only 5.8 per cent was on Pacific Division lines. At the time of the test, the flow of air into the Pacific Division mains

NOTES OF PROGRESS.

(*Continued.*)

was measured by a meter. It has been determined to cut out all laterals for the Pacific Division, north of the flow meter, and, since there is practically no leakage between the compressor plant and the meter, the proportion of cost of air compressing to be borne by the Pacific Division will be determined by the flow through the meter.

Electric Flat-irons for Ancon Laundry.

The Ancon hospital laundry will be equipped with electric flat-irons, replacing the ordinary ones heated over gasoline burners, now in use. They include ten 6-pound, fifteen 7-pound, and twenty 8-pound flat-irons, aluminum finish, each fitted with a cartridge unit, and a detachable wooden handle. In addition, six extra cartridge units for the 6-pound irons, six for the 8-pound, 12 extra attaching plugs for the 6-pound irons, and 12 for the 8-pound, together with 1,000 feet of No. 12 two-conductor heater cord, have been furnished. Current from present electric light wires will be used. The new method is expected to increase the efficiency of the plant, and to lessen the operating cost.

Gatun Dam Spillway.

The concrete work in the spillway of Gatun Dam is over 64 per cent completed, 144,193 cubic yards, out of a total of 225,000, having been placed at the close of work on July 8. A statement of the amount laid each working day last week, and of the total in place, follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
July 3	308	8.00	2
July 4 (Holiday)	....	....	....
July 5	192	7.30	2
July 6	292	8.00	1
July 7	244	7.30	1
July 8	268	8.00	1
Total	1,304	39.00	1.40
Previously reported	142,889		
Grand total	144,193		

Ancon Crusher.

A statement of the rock crushed at Ancon quarry, by days, during the week ending July 8, follows:

DATE.	Hours worked.	Cubic yards.
July 3	6.15	2,347
July 4 (Holiday)	....	....
July 5	6.40	2,600
July 6	7.35	2,894
July 7	6.55	2,973
July 8	7.05	2,180
Total	34.30	12,994

Additional Mixers at Miraflores Locks.

The concrete output in the upper lock at Miraflores will be increased by the placing in operation, this week, of an auxiliary mixing plant, situated in the east wall. It consists of two 2-cubic yard mixers, formerly in use in the east storage trestle at Pedro Miguel. The output from this plant will be utilized in the construction of the center wall, and will be handled in buckets and conveyed by the narrow-gage equipment to the chamber cranes, which will lift it into place. The method of transportation is similar to that employed at Pedro Miguel, except that the operation of the narrow-gage equipment, as well as that of the cranes, will be confined to the east chamber, the cantilever arms of the latter having sufficient reach to carry on the construction of both sides of the wall. In building the center wall in the lower lock, it is proposed to continue the use of the auxiliary plant in its present position, and to extend the narrow-gage track into the lock by means of an incline. It is expected that the additional mixers, when running at full capacity, will increase the output at these locks from 800 to 1,000 cubic yards a day.

The third berm crane at the upper lock, completing the two on the west bank, will be ready for operation this week. It will be used primarily in excavating a projecting section of the west bank at the upper end of the lock. Seven steam shovels are now excavating in the lower lock.

CONCRETE WORK IN THE LOCKS.

Over 56 per cent of the concrete for all the locks is in place, the amount at the close of work on July 8 being 2,413,616 cubic yards, out of a total of approximately 4,284,400. A total of 23,424 cubic yards of concrete was laid in the locks during the week ending July 8.

GATUN LOCKS.

Over 69 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of the work on July 8 being 1,443,415 cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each working day for the week ending July 8, and of the total, follows; and a similar statement for the work in the spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
July 3	2,062	34.44	7	928	9.40	2	187¼	3,177¼
July 4 (Holiday)	....	....	......	....	....	......	....	....
July 5	1,650	29.04	7	426	7.10	2	136½	2,212½
July 6	1,976	32.12	7	572	8.40	2	228¼	2,776¼
July 7	1,928	31.21	7	570	6.10	2	276	2,774
July 8	1,556	24.35	6	702	9.00	2	234	2,492
*Portable mixers	....	....	......	274	....	......	....	274
Total	9,172	151.56	6.80	3,472	40.40	2	1,062	13,706
Previously reported	....	....	......	....	....	......	....	1,429,709
Grand total	....	....	......	....	....	......	....	1,443,415

*The 274 yards shown for the portable mixers are reinforced concrete, and were placed on the following days: July 3d, 61½; July 5th, 61; July 6th, 48; July 7th, 55; July 8th, 48½.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is over 81 per cent completed, 679,528 cubic yards, out of a total of 837,400, having been placed at the close of work on July 8. The record for each of the five 8-hour working days of last week, follows:

DATE.	AUXILIARY PLANT.						Large stone.	Total.
	2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
July 3	634	15.00	3	235	12.00	2	....	869
July 4 (Holiday)	....	....	......	....	....	......	....	....
July 5	670	17.00	3	195	10.17	2	....	865
July 6	498	13.00	3	121	6.75	1	....	619
July 7	710	17.00	3	128	7.17	1	....	838
July 8	954	21.00	3	113	6.00	1	4	1,071
Total	3,466	83.00	3	792	42.09	1.4	4	4,262
Previously reported	....	....	......	....	....	......	4,202	675,266
Grand total	....	....	......	....	....	......	4,206	679,528

MIRAFLORES LOCKS.

Over 21 per cent of the concrete for the system of two twin locks at Miraflores was in place on July 8, the total amount on that date being 290,673 cubic yards, out of a total of approximately 1,362,000. The record for each of the five 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT.							Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
July 3	846	20.92	4	358	28.00	4	....	....	......	....	1,204
July 4	Holiday	....	......	....	....	......	....	....	......	....	....
July 5	676	21.50	4	234	16.00	2	....	....	......	....	910
July 6	680	21.17	4	315	21.50	3	....	....	......	....	995
July 7	1,004	23.17	4	348	23.50	3	....	....	......	....	1,352
July 8	696	19.00	4	299	22.50	3	....	....	......	....	995
Total	3,902	105.76	4	1,554	111.50	3.2	....	....	......	....	5,456
Previously reported	....	....	......	....	....	......	....	....	......	3,693	285,217
Grand total	....	....	......	....	....	......	....	....	......	3,693	290,673

STEAM SHOVEL RECORDS.

Work of Central Division and P. R. R. Relocation Shovels in June.

During the month of June, the total amount of material excavated in the Central Division was 1,433,304 cubic yards, of which 140,605 cubic yards were classified as earth, and 1,292,699 cubic yards as rock. Of this quantity, 1,399,458 cubic yards were removed by steam shovels, and 1,558 cubic yards by bucket cranes. Contractors removed 29,856 cubic yards by sluicing, and 2,432 cubic yards by hand.

The high record for the month was made by shovel No. 207, working 24 days in the Culebra district, which excavated 49,409 cubic yards of rock and earth. The second best record for the month was made by shovel No. 219, working 26 days in the Culebra district, which excavated 49,172 cubic yards of rock and earth.

The best record for a shovel of the seventy-ton class was made by shovel No. 109, working 21 days in the Culebra district, which excavated 37,072 cubic yards of rock and earth.

Shovel No. 230, working in the Culebra district, made a high record for one day by excavating 3,097 cubic yards of rock on June 24.

Except where noted, monthly reports are computed by place measurement, while the daily reports are based on car measurement. The best records for the month, and for one day, are shown below:

BEST RECORDS FOR THE MONTH.

EMPIRE DISTRICT.

Shovel No.	Cubic Yards.			
	Earth.	Rock.	Total.	No. of days at work.
215	....	40,468	40,468	26
228	....	39,074	39,074	25
253	....	39,054	39,054	26

CULEBRA DISTRICT.

Shovel No.	Earth.	Rock.	Total.	No. of days at work.
207	1,453	47,956	49,409	24
219	19,669	29,503	49,172	26
230	....	48,773	48,773	24

PEDRO MIGUEL.

Shovel No.	Earth.	Rock.	Total.	No. of days at work.
231	....	27,585	27,585	18½

BEST RECORDS FOR ONE DAY.

Shovel.	Location.	Date.	Character of material excavated.	Cubic yards.
253	Empire	June 13	Rock	2,356
210	Empire	June 14	Rock	2,280
226	Empire	June 6	Rock	2,246
263	Empire	June 26	Rock and earth	2,219
230	Culebra	June 24	Rock	3,097
208	Culebra	June 22	Rock	2,964
208	Culebra	June 26	Rock	2,755
231	Pedro Miguel	June 5	Rock	1,900
231	Pedro Miguel	June 7	Rock	1,843
231	Pedro Miguel	June 2	Rock	1,824
231	Pedro Miguel	June 10	Rock	1,748

STEAM SHOVELS ON RELOCATED LINE.

The total excavation on the relocated line of the Panama railroad, in June, amounted to 394,665 cubic yards. Of this amount, 137,205 cubic yards were classified as earth, 24,010 cubic yards as loose rock, and 233,450 cubic yards as solid rock. Company forces removed 385,435 cubic yards, and 9,230 cubic yards were removed by the contractor.

Steam shovels excavated 370,440 cubic yards. Pan car task gangs took out 21,835 cubic yards, and 2,390 cubic yards were excavated for culvert foundations.

The best record was made by steam shovel No. 257, working on the Gatun section, which excavated 58,850 cubic yards of rock. This shovel has held the record on the Isthmus for the past five months.

In the 70-ton class, the best record was made by steam shovel No. 110, working near Paraiso, on the Gold Hill line, which excavated 26,790 cubic yards of earth, and 16,450 cubic yards of rock, a total of 43,240 cubic yards.

The best day's record for shovels with 5-yard dippers was made by steam shovel No. 262, working at Monte Lirio, which took out 3,130 cubic yards of earth and rock on June 14.

The best day's record for 70-ton shovels was made by steam shovel No. 110, working near Paraiso, which excavated 2,260 cubic yards of earth on June 12.

Month's records are place measurement, and day's records are car measurement. All material is loaded in 10-yard Western dump cars.

BEST RECORDS FOR THE MONTH.

Shovel No.	Location.	Cubic Yards by Cross Section.			
		Days worked.	Earth	Rock.	Total.
257	Gatun	26	....	58,850	58,850
262	M. Lirio	26	....	51,700	51,700
110	Paraiso	26	26,790	16,450	43,240
105	M. Lirio	26	28,700	12,300	41,000

Total output during the month of June, 370,440 cubic yards.

Total number of steam shovel working days, 252½.

Average output per working day, 1,467 cubic yards.

Saved a Spanish Laborer.

Under date of July 6, the Senior Traveling Engineer made the following report:

"While handling engine No. 657 on train No. 133, on July 4, and while engine was passing the passenger station at Las Cascadas at 6.40 p. m., a Spanish laborer walked over from the left side of the train, and stopped directly in front of the engine. Edgar Girdner, craneman on crane No. 36, attached to the Las Cascadas wrecker, without thinking of the danger to himself, jumped out of the crowd standing on the station platform, and, grasping the man by the coat, pulled him clear of the engine, which was just about to strike him."

Water Pressure in City of Panama.

Work has been completed on the 10-inch main to connect the high pressure reservoir at Ancon, with the 16-inch main which carries water from the Rio Grande reservoir to the city of Panama. By simply opening a valve, this main can be made to feed into the city system, raising the pressure at once to 85 pounds. With the old 8-inch main from the reservoir, also feeding into the city system, the pressure can be increased at once to 100 pounds.

Steam shovel No. 266, at work in the borrow pit in the Brazos bottom, on the relocation of the Panama railroad on July 2, was caught in an unexpected slide of earth and heavy rock, which broke and bent several I-beams, and damaged the engine. The operators were not injured.

Accident in Culebra Cut.

Locomotive No. 316, drawing a flat car loaded with coal for the steam shovels in Culebra Cut, ran upon a piece of track undermined by a slide on the west incline into Culebra Cut, near Las Cascadas, on the night of July 8. The track gave way, and the locomotive and car were thrown into the Cut, a distance of about 40 feet, carrying eight men with them. Harold Springer, Barbadian, brakeman on the train, I. C. C. check No. 121,606, was killed. The injured were George L. Jenkins, American, conductor; George Lewis, Panamanian, brakeman; Nathaniel Rollins, Barbadian foreman; Joseph Williams, St. Lucian, laborer. They will recover.

Chame Light Service.

Lightning struck the lighthouse at Chamé Point on the night of July 3, and shattered the light and substructure. This was one of the five 8-day coal oil lights established between Balboa and the sand boats at Chamé to guide the tugs in the Pacific Division sand service. It was a white light on a wooden tower 30 feet high, and the range of visibility was 20 miles.

At Melones Island, the Commission has a double white light on a post; on Tortolita a single fixed white light and house; off Tortolita, a double horizontal white light on floating buoy; on Changarmi Island, a double white light on a post.

Installation of Officers.

At a meeting of Local Union, No. 677, I. B. E. W., held at Gatun, Sunday, July 9, the following officers were installed: President, W. E. Mitchell; vice-president, Sam King; recording secretary, A. M. Harle; financial secretary, C. J. MacNelley; treasurer, A. Woolnough; first inspector, W. E. Kemper; second inspector, C. F. Smith; foreman, F. Metzger. President Mitchell delivered a short lecture on "Multiple unit control," after which refreshments were served.

Obituary.

Marie Emile Pierre Gey, French vice-consul at Colon, died at Ancon Hospital on Thursday, July 6, from a stroke of paralysis. He was a native of France, born April 8, 1852, and had been connected with the French consular service on the Isthmus, in various capacities, since June 1, 1892, with the exception of about six years, during which period he was consular clerk at Sierra Leone, and later, vice-consul, at Las Palmas, Spain. He was an employe of the first French Canal Company in the '80s., and later became interested in one of the contracts for canal excavation at Pedro Miguel.

WEATHER CONDITIONS, CANAL ZONE, JUNE, 1911.

Stations.	Press're (reduc'd to mean of 24 hours.)	Temperature.					Mean relative humidity.	Precipitation.			Wind.				
		Mean.	Maximum.	Date.	Minimum.	Date.		Total inches.	Station average.	Number of rainy days.	Total movement (in miles.)	Prevailing direction.	Max. velocity (in miles.)	Direction.	Date.
Cristobal	29.848	79.3	88	8	72	23	90	15.58	13.29	24	4,146	S.E.	25	W.	25
Culebra	29.838	79.4	91	26	71	24	93	4.25	8.92	22	3,802	N.W.	28	N.E.	24
Ancon	29.834	80.0	94	20	71	10	91	3.40	8.32	16	4,235	N.W.	20	W.	30

RECORD OF CANAL WORK SINCE AMERICAN OCCUPATION.

MONTHLY TOTALS BY CUBIC YARDS OF EXCAVATION AND LOCK AND DAM CONSTRUCTION.

[*All figures are of work useful for the completed Canal.*]

DRY EXCAVATION.

CENTRAL DIVISION.

M'THS.	Culebra Section.*								Chagres Section.**				
	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
Jan	......	70,650	120,990	566,750	1,227,022	1.150,249	1,323,693	1,356,394	......	169,447	389,399	175.802	255,385
Feb	......	75,200	168,410	639,112	1,248,265	1,194,454	1,259,173	1,409,338	......	200,145	450,182	286,309	219,550
March	......	132,840	239,178	815,270	1,290,885	1,434,597	1,509,728	1,728,748	......	324,233	619,491	484,846	297,339
April	......	126,749	213,177	879,527	1,242,574	1,272,746	1,288,845	1,414,336	......	329,483	510,020	428,777	102,103
May	27,556	75,935	196,209	690,365	960,840	1,126,963	1,099,279	1,299,100	......	235,902	386,170	248,974	29,783
June	32,551	76,905	212,623	624,586	1,134,032	1,242,134	1,305,141	1,401,016	......	322,145	275,900	164,389	32,288
July	31,599	78,570	159,789	770,570	1,121.325	1,200,828	1,153,810	......	......	345,757	233,897	166,106	......
August	35,056	49,210	244,823	786,866	1,171,927	1,173,370	1,377,714	......	2,900	368,683	231,543	234,404	......
Sept	25,220	44,085	291,452	753,468	1,122,860	1,235,978	1,339,948	......	21,546	346,948	235,818	234,290	......
Oct	19,695	52,940	327,009	834,499	1,160,101	1,302,901	1,320,314	......	25,627	424,911	221,409	271,409	......
Nov	28,860	60,540	221,642	790,632	1,022,576	1,070,792	1,209,554	......	44,044	336,390	93,619	260,882	......
Dec	42,935	70,630	307,689	1,025,485	1,210,046	1,152,022	1,211,400	......	98,652	383,948	105,044	197,481	......
Totals	243,472	914,254	2,702,991	9,177,130	13,912,453	14.557,034	15,398,599	8,608,932	192,769	3.787,992	3,752,492	3,153,669	936,448

ATLANTIC DIVISION.

Months.	Colon (Mindi)†		Gatun Locks, Dam and Spillway.††			
	1909.	1911.	1908.	1909.	1910.	1911.
January	45,664	......	292,155	102,690	125,011	65,889
February	46,046	47,102	282,797	95,031	123,738	50,511
March	70,713	49,734	374,598	90,051	132,007	51,431
April	74,368	74,030	373,456	70,009	103,243	12,548
May	71,407	64,482	266,747	52,786	82,958	17,677
June	80,101	59,157	244,951	36,556	88,088	4,840
July	82,378	......	213,359	39,058	95,503	......
August	66,249	......	188,262	40,346	99,737	......
Sept'mber	61,437	......	145,990	49,945	103,040	......
October	72,643	......	154,064	57,321	118,327	......
November	42,009	......	118,278	63,452	94,552	......
December	......	......	119,904	96,590	72,030	......
Totals	713.015	294,505	2.774,561	793,835	1,238,234	202,896

PACIFIC DIVISION.¶

Months.	Pedro Miguel Locks.‡				Miraflores Locks, Dams and Spillway.‡‡			
	1908.	1909.	1910.	1911.	1908.	1909.	1910.	1911.
January	......	83,726	27,320	15,690	7,203	61,202	31,479	48,744
February	......	58,242	9,486	6,809	39,046	53,689	15,300	12,936
March	......	95,624	6,784	674	73,194	51,417	18,184	72,739
April	......	101,365	9,129	255	98,943	60,060	12,148	79,751
May	......	57,523	10,405	5,905	73,023	47,588	20,250	57,975
June	13,228	70,971	8,420	7,454	68,691	55,653	21,994	38,023
July	22,648	77,503	4,410	......	104,369	50,999	11,990	......
August	22,217	58,025	12,789	......	94,248	35,446	17,548	......
Sept'mber	28,833	48,825	10,405	......	90,923	31,803	8,590	......
October	48,875	39,002	7,433	......	74,700	25,349	9,850	......
November	55,401	20,207	10,636	......	52,930	18,644	9,400	......
December	65,578	28,342	11,195	......	69,650	20,083	17,906	......
Totals	256,780	739,355	128,412	36,787	846,920	511,933	194,639	310,168

*Total to July 1, 1911, 65,514,865 cubic yards.

**Total to July 1, 1911, 11,823,370 cubic yards, of which 140,347 cubic yards were removed by sluicing.

†Total to July 1, 1911, 1,771.326 cubic yards; in this total are included 172,851 cubic yards removed in 1907, and 590,955 cubic yards removed in 1908.

††Total to July 1, 1911, 6,376,333 cubic yards; in this total are included 26,628 cubic yards excavated October to December, 1906, and 1,340,179 cubic yards in 1907.

‡Total to July 1, 1911, 1.161.334 cubic yards.

‡‡Total to July 1, 1911, 1,863,660 cubic yards.

¶There were also 73,233 cubic yards excavated at Balboa locks and dams in 1907. There were removed 437,771 cubic yards at different points in prism to July 1, 1911. There were also 172 cubic yards removed by steam shovels outside of prism during October, 1908.

WET EXCAVATION.

ATLANTIC DIVISION.

Months.	Atlantic Entrance.§					Gatun Locks †	
	1907.	1908.	1909.	1910.	1911.	1908.	1909.
Jan	111,100	490,701	521,050	510,055	520,181	......	97,043
Feb	110,002	427,722	444,910	493,448	455,318	......	132,291
Mar	84,145	546,886	461,208	412,325	391,736	......	141,838
April	69,889	496,366	470,635	190,574	492,579	......	17,938
May	133,847	564,386	315,370	447,578	514,178	......	52,011
June	124,118	572,749	182,575	458,021	452,098	......	38,829
July	109,922	625,497	348,451	423,092	......	......	......
Aug	194,297	638,217	422,846	508,829	......	......	......
Sept	403,842	624,776	410,574	451,873	......	..	......
Oct	415,120	505,260	314,778	549,788	......	......	......
Nov	422,797	570,832	457,889	600,708	......	......	......
Dec	442,835	679,604	489,121	482,370	......	8,583	......
Tot'ls	2 621,914	6,742,996	4,839,407	5.528,661	2,826,090	8,583	479,950

PACIFIC DIVISION.

Months.	Pacific Entrance.§§							Miraflores Locks.§§§	
	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1910.	1911.
Jan	......	95,940	94,710	460,250	469,529	518,936	379,810	......	89,243
Feb	......	95,940	93,480	663,519	671,477	285,791	386,866	......	87,335
Mar	......	116,820	92,319	783,281	865,696	462,588	639,761	......	......
April	......	110,700	104,855	676,539	731,767	534,322	439,622	......	......
May	......	112,340	122,157	530,466	720,753	484,509	548,047	......	......
June	50,676	62,697	133,575	656,621	844,685	475,486	576,100	......	......
July	41,533	98,400	108,338	696,170	733,181	515.782	......	......	......
Aug	54,530	111,930	168,284	737,774	623,263	506,969	......	......	......
Sept	114,308	105,780	153,975	750,080	662,976	473,585	......	......	......
Oct	81,836	97,170	357,122	762,276	720,920	467,873	......	40,000	......
Nov	71,176	92,988	365,423	609,089	627,791	425,870	......	47,444	......
Dec	71,094	90,528	349,551	729,960	727,460	387,034	......	68,681	......
Tot'ls	485,153	1,191,233	2,143,789	8,056,025	8,399,498	5,538,745	2,970,206	156,125	176,578

§Total to July 1, 1911. 23,986,533 cu. yds.; in this total are included 399,820 cubic yards excavated in 1905, and 1,027,645 cubic yards in 1906.

§§Total to July 1, 1911, 28.784,649 cubic yards. Of this amount, 197,677 yards were removed by monitors.

§§§Total to July 1, 1911, 642,350 cubic yards; in this total are included 309,647 cubic yards excavated in 1909.

†Total to July 1, 1911, 488,533 cubic yards. There were also 38,425 cubic yards removed by dredges at Gatun Dam site in 1907.

CONCRETE IN LOCKS AND DAMS.

Months.	Gatun Locks.			Pedro Miguel Locks.			Miraflores Locks.		
	1909.	1910.	1911.	1909.	1910.	1911.	1909.	1910.	1911.
Jan	......	54.136	72,919	......	16,273	38,513	......	......	24,018
Feb	......	55,696	72,103	......	13,218	37,011	......	146	20,896
March	......	60,998	86,884	......	18,793	44,716	......	314	31,173
April	......	63,227	67,361	......	24,522	28,635	......	13	38,758
May	......	74,273	67,844	......	29,576	19,135	......	27	36,154
June	......	89,401	55,305	......	30,631	18,243	......	1,603	26,536
July	......	84,001	......	......	41,464	......	28	3 672	......
Aug	1,298	85,686	......	......	51,264	......	74	6,030	......
Sept	12,294	76,720	......	2,370	50,702	......	......	18,133	......
Oct	29,378	86,949	......	8,310	61,422	......	......	22,159	......
Nov	30,270	75,152	......	10,169	64,248	......	......	23,871	......
Dec	42,832	80,212	......	13,007	42,834	......	......	21,533	......
Total	116,072	886,451	422,416	33,856	444,947	186,253	102	97,501	177,535

From March 17, 1909, to July 1, 1911, there were placed in the Spillway of Gatun Dam 144,347 cubic yards of concrete, including 4,830 cubic yards placed in June, 1911; in Miraflores Dam, there were placed 321 cubic yards up to July 1, 1911.

FILL PLACED IN DAMS.

M'THS.	Gatun.*				Pedro Miguel.†		Miraflores.‡			
	1910.		1911.		1910.	1911.	1910.		1911.	
	Wet.	Dry.	Wet.	Dry.	Dry.	Dry.	Wet.	Dry.	Wet.	Dry.
Jan	178,254	236,994	211,992	218,690	......	......	......	28,151	89,243	24,685
Feb	292,215	271,788	301,733	211,008	11,510	......	......	1,438	87,335	32,404
Mar	210,387	332,661	342,800	255,047	22,860	......	......	5,385	25,131	23,940
April	242,440	263,437	368,658	205,130	31,394	......	......	......	14,100	67,260
May	249,283	194 868	419,348	207,751	23,572	......	......	6,480	18,353	30,032
June	384,166	258,653	432,008	227,996	1,350	......	......	7,356	53,858	28,315
July	462,092	180,111	......	......	......	......	......	4,290	......	......
Aug	406,606	229,774	......	......	......	......	......	10,898	......	......
Sept	457,637	223,102	......	......	......	......	......	11,220	......	......
Oct	480,732	259,619	......	......	......	......	40,000	14,370	......	......
Nov	129,666	266,105	......	......	......	......	47,444	8,960	......	......
Dec	243,121	169,575	......	......	......	......	68,681	39,224	......	......
T'tal	3,736,599	2,886,687	2,076,539	1,325,622	90,686	......	156.125	137,772	288,020	206,636

*Dry fill begun in January, 1907, and 2,096,477 cubic yards of wet, and 3,241,418 cubic yards of dry fill were placed in 1907, 1908 and 1909.

†170,166 cubic yards placed in dams up to December, 1909, inclusive.

‡138,587 cubic yards of wet fill and 472,091 cubic yards of dry fill were placed in dams up to December, 1909.

CANAL EXCAVATION TO DATE.

By French Companies		78,146,960
French excavation useful to present Canal		29,908,000
By Americans—		
Dry excavation	88,886,717	
Dredges	54,080,837	
Total		142,967,554
May 4 to December 31, 1904	243,472	
January 1 to December 31, 1905	1,799,227	
January 1 to December 31, 1906	4,948,497	
January 1 to December 31, 1907	15,765,290	
January 1 to December 31, 1908	37,116,735	
January 1 to December 31, 1909	35,096,166	
January 1 to December 31, 1910	31,437,677	
January 1 to May 31, 1911	16,560,490	

Totals by Divisions and Amount to be Excavated.

Divisions.	Amount excavated.		Remaining to be Excavated.	
Atlantic—				
Dry excavation	8,147,659	32,661,150	125,395	10,696,195
Dredges	24,513,491		10,570,800	
Central—				
Culebra Cut	65,514,865	77,338,235	18,671,859	19,786,783
All other points	11,823,370		1,114,924	
Pacific—				
Dry excavation	3,541,170	32,968,169	2,838,972	9,087,234
Dredges	29,426,999		6,248,262	
Grand totals		142,967,554		39,570,212

SPILLWAY REGULATING GATES.

Description of Gates for Controlling Surfaces of Gatun and Miraflores Lakes.

Twenty-two spillway gates to regulate the surface of Gatun and Miraflores Lakes, and caissons to ensure a means of repairing these gates, are part of the material advertised for in Circular 636, bids on which will be opened at the Washington office on July 24. These gates will be mounted on the spillway dams at Gatun and Miraflores. Delivery is desired by October 1, 1912.

The Spillway of Gatun Dam is a concrete lined channel, which runs through a hill about midway between the ends of the dam. It is 280 feet wide, but at the upstream, or lake end, widens much as a flat bottle does at the point where the neck joins the body. Across this wide part, at the south end of the channel, a concrete dam is being built in ogee form, with its crest on the arc of a circle. This dam is 630 feet long on the crest line across the channel, 93.04 feet wide from heel to toe, and the crest will be 69 feet above sea level, or 16 feet lower than the normal level of the lake. On the top of this dam will be the regulating works, the main part of which are the sluice gates of the Stoney type. An article in THE CANAL RECORD of September 8, 1909, gave details of Gatun Spillway, with drawings, showing the location of the regulating works.

After study of the maximum flow to be cared for, and the probable rate of discharge over the dam, it has been determined that 14 gates, each 45 feet wide, with sill elevation at 69 feet above sea level, will give absolute control of the lake under all possible conditions. The top of these gates, when closed, will be 88 feet above sea level, and the bottom, when they are open, will be at 92 feet. Since little drift will have to be taken over the spillway dam, owing to the large size and irregular outline of the lake, and the prevailing direction of the winds, the opening at elevation 92 will allow any drift that may reach the dam to pass over.

At Miraflores, there will be a straight concrete dam of ogee section, 432 feet long on the crest, connecting the east wall of the upper locks with the rock in the side hill. The crest will be 38.67 feet above sea level, 16 feet below the ordinary level of Miraflores Lake. On this dam, as at Gatun, the regulating gates will be erected between concrete piers, eight gates being required, each closing an opening 45 feet wide. The gates may be lifted 23 feet, allowing a maximum flow of 92,000 cubic feet per second. An article, with drawings illustrating the structure of Miraflores spillway, and showing the location of the regulating gates, was published in THE CANAL RECORD of September 28, 1910.

GATES.

The gates will be identical in size and construction for both spillways, and will be of the Stoney type, traveling on two roller trains, which will run on a track located in a niche $15\frac{1}{2}$ inches deep in the sides of the piers. Each will consist essentially of a system of horizontal girders, vertical end posts, cross frames, and intercostals, forming a skeleton, and of steel plate sheathing, extending from top to bottom on the upstream side of the gate. In each gate there will be three vertical frames, built in between the horizontal girders, and extending from the bottom to the top of the gate. Each will be 46 feet $3\frac{1}{2}$ inches long 19 feet high, and will weigh $42\frac{1}{2}$ tons. It will have a range of motion of 22 feet 6 inches, and, while in operation, must stand a maximum head of 18 feet. At each end, on the downstream side of the posts, the gates will be provided with a rocker-bearing device to equalize the distribution of pressure on the roller train bearings. The gates will have a play of from $\frac{1}{4}$ to 3-8 inch upstream from bearings, and of $\frac{1}{4}$ inch lengthwise of the leaf. A water-tight seal will be accomplished by vertical seals of the spring type moving along finished surfaces on castings in the walls of the piers, and on the bottom, by the lower edge of the face of the gate sheathing and bottom angle coming in contact with a babbitt strip, placed in a casting across the crest of the wiers.

In both the spillways, the operating machinery will be erected in a tunnel in the concrete dam. This machinery forms a separate contract. Two valves of the Stoney type, but of the size to be used in the locks, are being tested at Gatun to determine their efficiency, and the tests will be completed before the construction of the spillway gates is begun.

CAISSONS.

Two caissons will be required, one for each spillway, but they will be interchangeable, and may be towed through the Canal, so that both may be used at one place, if desired. Their office is to form a dam across the apertures on the upstream side of the gates, and to this end, a proper bearing for them will form part of the construction of each pier and the sill. Each caisson will consist of a framework of vertical frames and horizontal steel girders, which will support a system of intercostals to form the skeleton, and, over this framework, steel sheathing plates will be riveted to form a water-tight box. The deck will be of yellow pine, and the keels and sills of white oak. In the bottom of each caisson, there will be a monolith of concrete for ballast, 2 feet $6\frac{1}{2}$ inches thick, with a sump for the suction pipe of the pump. On this permanent ballast will be a layer of concrete blocks, 8 inches square by 6 inches, which can be moved as required to provide suitable adjustment of amount and position of ballast. The caisson will be filled through one 10-inch and two 4-inch pipes fitted with valves. Each caisson will be fitted with a horizontal, hand-operated force pump, 6-inch stroke, 3-inch diameter bottom suction, $2\frac{1}{2}$-inch discharge, and will be brass lined throughout.

The caissons will be 49 feet long, and 24 feet 4 inches high, and will be erected on the bank of the lake ready for launching. When used, they will be towed light to the seats provided for them in the piers of the regulating gates. When in position, they will be lowered by opening the valves, allowing them to fill with water.

BRIDGES.

The bridges will connect the piers in which the gates are erected, making a footway across the top of the dams, thus giving easy access to the gates and piers, and affording a convenient means of crossing the spillway. Each span, or bridge, will be built of two plate steel girders, bolted to cast iron seats in the concrete of the piers or abutments. Upon these girders will be fastened checkered steel plates, forming a walk, or floor. Each bridge, or span, will be 45 feet long, and 3 feet wide, and the heaviest member will weigh only 4,300 pounds, and will, therefore, be easily removable. The total weight of the 22 bridges will be about 215 tons. Across the top of each dam, in two parallel lines, will be erected galvanized, wrought iron railings to guard the passageway.

Crane Accident.

On July 3, five Western dump cars were being placed on a track in the forebay at the Miraflores Locks, and failed to uncouple. When the engine backed up a second time to uncouple, a pin was drawn by the brakeman before the cars stopped, and they struck a locomotive crane belonging to the McClintic-Marshall Construction Company, knocking it over the mitre wall. The crane can be repaired.

PERSONAL.

Major Edgar Jadwin has returned to the Isthmus to await the arrival of orders directing him to take command of the Nashville and Chattanooga engineer districts, with headquarters at Nashville.

Knights Templar.

All Knights Templar and 32-degree Masons on the Isthmus are requested to forward their names to secretary, Panama Shriners' Club, Gatun.

F. H. WANG, *Secretary.*

Empire Ladies' Auxiliary.

On Friday, July 7, the ladies' auxiliary of the Empire Christian League held a missionary meeting in the chapel, when the guest and speaker was Miss Blackmore, who has been engaged in missionary work in Nicaragua for eight years. The auxiliary held a public meeting on Tuesday evening, July 11, when Miss Blackmore was again the speaker. The offerings at these meetings were presented to Miss Blackmore for use in her work. On Sunday evening, July 30, the auxiliary will hold a missionary meeting in the chapel, beginning at 8 o'clock, when the following program will be given: Hymn, by the congregation; devotional, Mrs. H. A. A. Smith, leader; song, "The Christian Flag," by Mrs. Helmer, assisted by a class of girls; exercise, by seven little girls; review of the study work of the year, by the leaders, Mrs. Stephen Witt, Mrs. A. A. Nellis, and Mrs. Glaw; missionary hymn, by the auxiliary; recitation, Miss Phyllis Kelly; offering; hymn, by the congregation; closing prayer. The offering will be devoted to missionary work in the Canal Zone. At the recent sale held at the clubhouse, the sum of $16 was made. The auxiliary has completed the study of the book "Western women in Eastern lands," and will begin a new work at the meeting on August 4. The meetings of the organization are held on the first and third Fridays in each month; the program on the first Friday is devoted to the study of mission work, and on the second, the program consists of miscellaneous papers on various topics.

Steam Shovel and Dredge Men.

Local 19, I. B. of S. S. and D. M., will hold their regular meeting on Sunday, July 16, at Empire lodge hall at 12.15 p. m. All members are expected to attend.

A. EDMONSON, *Secretary and Treasurer.*

Rodmen and Levelmen.

The examination to test the fitness of rodmen and levelmen for promotion, announced to be held at Culebra on Sunday, July 16, has been postponed to Sunday, July 23.

SOCIAL LIFE OF THE ZONE.

Women's Clubs.

The Gatun Woman's Club held a social meeting on Thursday afternoon, July 6, when a program was given, consisting of a piano selection by Miss Neville, songs by Mr. Smith, and a series of charades under the direction of Mrs. John Murray, assisted by Miss Teese. Following the program, refreshments were served. This meeting marked the close of the club year. Officers were elected for the ensuing year, as follows: President, Mrs. W. H. Allen; vice-president, Mrs. W. M. Martin; secretary, Mrs. George H. A. Barte; treasurer, Mrs. J. F. Hanna. The opening meeting for the next club year will be held on October 5.

Baptist Church Extension Work.

The new Baptist church building in Empire, the corner stone of which was laid in April, is completed. The building, which is located near the market, is a frame structure, with a seating capacity of 150, and cost $600. It is sufficiently furnished for the conduct of public worship, and, as soon as funds are available, a bell and baptistery will be added. This is the third building to be constructed under the pastorate of the negro representative of the National Baptist Convention. The church in Panama will celebrate its third anniversary on July 16. The preacher at the morning service will be the Rev. Harry Compton, pastor of the Methodist Episcopal Church in Panama, and the Rev. Carl H. Elliott of the Cristobal Union Church will preach at 3 o'clock. The church has recently installed a new organ, which was purchased for $500. The Panama Baptist Church is organized with 260 members. The second church is located at Pedro Miguel, and has an organized congregation of 50 members. The new church at Empire has a membership of 35.

Adventist Church in Colon.

The members of the Seventh Day Adventist Church, Colon, are desirous of erecting a new church and mission building to replace the one destroyed by fire in March, as soon as funds are in hand to undertake the work. An appeal, for the purpose of raising the money, has been issued, and it is desired that all who are interested in the work send their contributions to the special secretary, fire relief fund, Room 1, House 140, Cash street, Colon, or to the pastor of the church, H. C. Goodrich, Colon, or to the secretary of any Commission clubhouse, designating, in this case, the purpose for which the contribution is made.

Fourth of July Events.

Between eleven o'clock in the morning and five o'clock in the afternoon, 4,200 lunches were served by the committee in charge of the free lunches at the Fourth of July celebration in Cristobal.

In lawn tennis, the singles were won by Fechtig of Ancon, who defeated Ross of Ancon, by the following score: First set, 1–6; second set, 6–4; third set, 3–6; fourth set, 4–6.

The other contests resulted, as follows:

ATHLETIC EVENTS.

Pole vault—De Cora, 10 feet 4 inches, Barcroft, 10 feet 4 inches; Sims, 8 feet 10 inches; tie jump won by De Cora.

Discus throw—Herring, 107 feet 8½ inches; Sollenberger, 98 feet 11 inches; Shaffer, 98 feet 2½ inches.

Shot put, 12 pounds—Herring, 45 feet 7¼ inches; Sollenberger, 42 feet 1¼ inches; Shaffer, 35 feet 9½ inches.

High jump—R. A. Koperski, 5 feet 3 inches; Clark, 5 feet 2 inches; L. Koperski, 5 feet 1 inch.

Broad jump—Herring, 20 feet 9 5-8 inches; Sollenberger, 18 feet 9 5-8 inches; Feld, 18 feet 1 7-8 inches.

100-yard run, boys—Jadwin, Lincoln, Warner; time, 12 2-5 seconds.

Boys' relay—Won by Gatun.

100-yard low hurdles—Kenealy, L. Koperski, Robitoy; time, 13 2-5 seconds.

100-yard run—Fitts, Earle, Robitoy; time, 11 2-5 seconds.

220-yard run—Herring, Tupper, Fitts; time, 25 seconds.

440-yard run, less 30 yards—Edwards, Meyers E. L. Koperski; no time taken.

880-yard run, less 60 yards—Scherzberg, Mangle, Russell; time, 2 minutes, 5 seconds.

One mile run, less 120 yards—Scherzberg, Butt, Koehler; time, 4 minutes 39 4-5 seconds.

One mile relay, less 120 yards—Won by the Ancon team, consisting of Edwards, Fitch, Kenealy, and Scherzberg; no time taken.

Wall scaling contest—Marine Company C, second team, 53 1-5 seconds; Marine Company C, first team, 1 minute 5 4-5 seconds; *Paducah* team, 1 minute 11 3-5 seconds.

Sack race, 50-yard—Guy Morrison, G. E. Scnlager, Ed. Otis; time, 17 2-5 seconds.

Potato race—Won by boys' team; time, 37 4-5 seconds.

Fat man's race—C. B. Sexton, E. Hunderlack; time, 15 seconds.

Three-legged race—Parkis–Mayhew, Wood–Morrison, Fee–Ray; time, 17 1-5 seconds.

Points by teams—Ancon, 38; Gorgona, 26; Culebra, 22; Camp Elliott, 6; Empire, 5; Cristobal, 4; *Paducah*, 1. Boys' races—Gatun, 13; Culebra, 1.

AQUATIC EVENTS.

Sailboat race, triangular course—J. Langenfeldt, *Caribbean*; Willliam J. Burn, *Cristobal*.

Aquatic boxing contest, four rounds, A. A. U. rules—J. S. Wilson, Cristobal.

U. S. Navy steam cutter race, triangular course, about five miles—Launch *Ruth*.

Swimming contest for men, distance, 100 yards—Harry Cooling, Gatun; A. V. Mitchell, Porto Bello; Joseph Mitchell, Gatun.

Life-boat race, class 2, four-oared, single scull, and coxswain, two miles; from off Pier 11, around buoy and return—W. J. Dempsey and crew of the *Phoenix*, first; Charles McCabe and crew of the *Carribbean*, second.

Canoe race from buoy off Pier 11, around buoy off Pier 13, and return, single scull—J. L. Greene, Cristobal.

Gasoline boat race, class 1, lengths 28 feet to 38 feet, from Pier 11, around buoy in bay and return—Quartermaster's Department launch.

Cutter race—Cutters from U. S. S. *Paducah*, Nos. 1 and 2. No. 1 won the race.

Life-boat race, class 3, two-oared, single-scull, and coxswain, one mile, from off Pier 11, around buoy in bay and return—M. O. Peterson, barge 16; E. Erickson, barge 15.

Relay swimming contest, four men, off Pier 11, 100 yards—Porto Bello team, consisting of J. E. Carpenter, captain; A. V. Mitchell, G. L. Bowes, J. F. Everett, won.

Gasoline boat race, class 2, less than 28 feet long from off Pier 11, around buoy in bay, and return—Launch *Anna*, Karl Edholm, Nombre de Dios.

Fancy diving contest—J. Fehrman, *Paducah*; H. N. Sollenberger, Culebra; A. V. Mitchell, Porto Bello.

Dory race, four-oared, double scull, from off Pier 11, around buoy in Limon Bay, and return—Erickson, and Benson, first; Coe and Walters, second; Parsons and Parsons, third; *Paducah* team, fourth.

Human duck hunt, four-oared yawl or whaleboat, and coxswain, chasing one man in dory or small boat, who was given 50 yards start—Erickson and crew, first; S. Benson, second.

Swimming contest for boys, 100 yards—P. C. Geyer, jr., Ancon; C. C. Jadwin, Gatun; Joe Burgoon, Colon.

Tub race, with shovels, 50 yards—T. Jones of the *Mariner* first; A. Fraser, Cristobal, second.

Greased horizontal spar, 60-foot long, supported on lighter off Pier 11; winner to leave lighter, go to end of spar, and return—Edward Atkins, Gatun.

Life-raft race, with shovels, six men to raft, three on a side; 75 yards and return—H. Cooling's team, Gatun.

The entertainment and amusement committee for the Fourth of July celebration of 1911 desires to express its appreciation of the services rendered on that day by the Marine Band. It also desires to tender thanks to Sergeant Allen and twenty privates of the Marine Corps, who ably assisted the decorating committee on July 2 and 3.

The chairman of the decorating committee, Mr. W. F. Shipley, has requested that it be announced that Mr. Frank Jury, of the Quartermaster's Department, Cristobal, had active charge of the designing and planning of the decorations.

The chairman of the committee begs to thank all the chairmen of subcommittees for their cordial cooperation and support, and especially Mr. W. F. Shipley, chairman of the subcommittee on decorations; Captain C. J. Anderson, chairman of the subcommittee on aquatic sports; and Mr. F. A. Gause, chairman of the subcommittee on exercises by the schoolchildren.

W. G. Comber, *Chairman.*
Entertainment and Amusement Committee.
Balboa C. Z., July 5, 1911.

Any one who wishes to have a program of the day's events to preserve as a souvenir can obtain it at the office of any district quartermaster.

Rifle Match.

The Canal Zone Rifle Club, held its second shoot on July 9, for the challenge cup, with the following results:

Walraven	178	Brong	162
Kane	156	Shade	161
Green	155	Dancause	159
Casper	152	Lehon	156
Taylor	143	Gallager	149
Blaisdell	142	Desh	147
Kennedy	135	Miller	146
Cappers	129	Cook	144
Phenix	127	Stackhouse	143
Afferman	70	Dowling	142

Red Cross Finances.

The financial statement of the Red Cross for the month of June follows:

RECEIPTS.		
June 1, On hand		$2,663.86
June 17, From W. L. Shipley, further proceeds of ball game for benefit of Colon fire sufferers	4.00	
June 30, Membership dues during June	2.00	
Total receipts		$2,669.86
DISBURSEMENTS.		
June 15, Relief of destitute Englishman, Colon	25.00	
June 15, Relief of destitute family, Empire	50.00	
June 17, Relief of wife of disabled employe, Culebra	10.00	
June 17, Deportation of Dominican woman, Colon	30.00	
June 26, Postage	2.00	
June 29, Loaned woman at Empire, pending proper signature of husband's pay check	32.95	
June 30, Payments a/c Colon fire	20.00	
Total disbursements		$ 169.95
June 30, Balance on hand, in general fund	$2,292.45	
June 30, Balance on hand, in Colon fire fund	207.46	
Total balance on hand		$2,499.91

John L. Phillips, *Treasurer.*

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Empire, C. Z., on Sunday, July 16, at 5.45 p. m. The program follows:

1 March—*The Conciliator* .... Scouton
2. Selection—*The Girl of My Dreams* .... Hoschna
3. Waltz—*Gaite* .... Waldteufel
4. Intermezzo—*The Dawn of Love* .... Bendix
5. Overture—*Norma* .... Bellini
6. Request Number—*Sextet from Lucia* .... Donizetti
7. Selection—*Robin Hood* .... De Koven
8. Idyl—*Garden of Roses* .... Pratt
9. Popular Number—*On, Wisconsin* .... Purdy

Oliver Kimball, *Acting Musical Director.*

The next concert will be given at Gorgona, C. Z., on Sunday, July 23.

Married.

TANNEHILL–GWYNNE—At Anconcita, in Ancon, on July 10, Jean Susan Gwynne to John Wesley Tannehill, Rev. J. L. Bicknell officiating. Canal Zone residence, Ancon.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

COROZAL.

A social organization, known as the "Hot hand society," has been organized at Corozal, with the following officers: Royal mut, J. E. Conn; secretary and treasurer, G. E. LeMire; chief executioner, M. E. Beall; assistant chief executioner, O. E. Bath. One of the objects of the club will be to increase the membership.

Basketball practice is held Monday and Friday nights, and it is expected to develop a strong league team.

CULEBRA.

The high duckpin scores for last week are, as follows: Huttlemaier, 111, 110, 109, 107, 105, 103, 101, 100, 100, 100; Case, 102, 101, 100; Silver, 103, 102, 101; Conlon, 112, 104; Mengel, 115; Cornthwaite, 102.

A basketball game between representative teams of the hotel and Administration Building last Thursday, resulted in a score of 39 to 27 in favor of the office men.

EMPIRE.

An informal "smoker" was given in honor of the return of the secretary of the clubhouse, Saturday evening, July 8. There were short speeches by Messrs. Warr, Clear, Nellis, and Dickson; Messrs. King, Dohrmann, Conner, Newbold, and Ross contributed musical numbers; and Mr. Vetall a buck and wing dance. There were refreshments and cigars, and an orchestra played throughout the evening. M. A. Hall was master of ceremonies.

The following high scores were rolled during the past month: Bigpins—Sawtelle, 202; Parkis, 219, 200, 213; Potter, 210; duckpins—Mason, 110; B. King, 100; Corning, 103.

Gymnasium classes were started again this week. All interested in physical exercise are requested to confer with Mr. Warr for particulars.

GORGONA.

There will be an old-fashioned home social on Thursday night, July 18, consisting of vocal and instrumental solos, recitations, and music by the Camp Elliott orchestra. Pumpkin pie and cocoa will be served. Members and their families will be admitted free, and nonmembers will be charged fifteen cents admission. Every person in town is invited, and a good time is promised for all.

The 200, and over, bowling scores for the month of June are, as follows: Bordt, 210, 205, 205; J. Orr, 247, 245; Stoehr, 202; Weigold, 208; Haldeman, 202.

The 100, and over, duckpin scores for June are, as follows: Sims, 100, 109, 101, 108, 106, 100, 112; Dunlop, 105, 105, 111; Haggerty, 104, 122, 112; Davenport, 105; Davis, 105; J. Orr, 108; Misal, 101; Duensing, 101; Atkins, 101, 108.

GATUN.

In the presence of a large number of the members on Thursday night, July 6, Secretary Smith formally presented to Louis DePoorter a gold medal, bearing the inscription "Champion pool player of the Canal Zone." The medal was given by the Canal Zone Y. M. C. As. in recognition of Mr. DePoorter's having won the recent interassociation pool tournament. It is on exhibition at the clubhouse.

Four hundred people attended the entertainment on Friday night, July 7, given as a benefit performance. The program was, as follows: Chorus, "Rainy day," schoolchildren; contralto solo, Miss Sloan; black face sketch, Mr. Shailer; equilibristic feats, Mr. Chatfield; soprano solo, Mrs. Hughes; Mexican national dance, Miss Cummings; violin solo, Miss Johnson; bass solo, Mr. Case; contralto solo with violin obligato, Miss Sloan and Miss Johnson; recitation, Miss Foster; accompanist, Mrs. M. H. Thatcher.

C. R. Ray, banjo player of Porto Bello, gave a recital at the clubhouse on Saturday night, July 8. About 150 people were present. Cigars and refreshments were served during the evening.

The following members of the literary club participated in the discussion, "Government ownership of railroads," held on Wednesday, July 5: Messrs. Gilkie, Waid, Thorwalson, Fox, and Barte.

Dr. Orenstein's second lecture before the "Life problem" club on Sunday evening, July 9, drew a crowd of men that packed the game room, where the lecture was held.

The "Rosselots" defeated the "McLains" in a game of duckpins played on Wednesday evening, July 5.

Tuesday and Friday nights will be set aside in the future for basketball practice.

CRISTOBAL.

The basketball game on Friday evening, July 7, was won by Luce's team by the score of 17 to 8, as follows:

Kavan's team—Poore, G., 1 foul; Cousineau, G., 1 foul; Guptil, C., 7 fouls; Ford, F., 1 foul goal; Kavan, F., 3 goals, 2 foul goals.

Luce's team—Schwallenberg, G., 6 fouls; Thomas, G., 2 fouls; Jordan, C., 1 foul; Luce, F., 1 foul, 5 goals, 1 foul goal; Simons, F., 2 fouls, 2 goals, 1 foul goal.

High scores for the week ending July 8 were, as follows:

Duckpins—Wood, 108, 101, 100, 103; Barrett, 104, 102; Jacques, 100, 103, 100; Gibson, 111, 108; Louch, 106, 105, 104, 103; Wheeler, 105, 106, 103; Furlong, 104; Orr, E., 105; Hess, 100;.

Tenpins—Furlong, 200, 214, 210, 221; Blackburn, 222; Bullard, 201, 228, 200, 211.

The following is the result of the match between Gatun and Cristobal:

CRISTOBAL.				
Bullard	150	200	211	561
Louch	188	150	139	477
Total				1,038
GATUN.				
Hodges	174	181	150	505
Greene	124	134	101	359
Total				864

Rainfall from July 1 to July 8, 1911, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	1.48	3	2.66
Balboa	3.33	3	4.47
*Miraflores	1.70	6	3.73
Pedro Miguel	1.50	6	2.87
Rio Grande	1.45	6	3.71
Central Section—			
Culebra	1.29	6	3.13
*Camacho	1.11	6	3.50
Empire	.77	6	2.19
Gamboa	1.95	8	5.95
*Juan Mina	2.40	6	6.28
Alhajuela	3.92	5	8.03
*El Vigia	4.20	5	6.81
*Gorgona	1.64	8	4.97
San Pablo	1.68	6	3.83
Tabernilla	1.01	6	3.09
Bohio	2.28	5	5.69
*Monte Lirio	2.93	5	7.79
Atlantic Section—			
Gatun	1.60	5	4.29
*Brazos Brook	3.97	5	9.42
Cristobal	3.88	5	11.16
Porto Bello	3.24	2	7.92

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

June Rainfall for Three Years.

STATION.	1909	1910	1911	Station Average	Years of Record	Rainy days 1911
Pacific Section–	*Ins.*	*Ins.*	*Ins.*	*Ins.*		
Ancon	9.90	8.82	3.40	8.32	14	16
Balboa	12.06	10.44	4.23	8.09	15	15
Miraflores	18.31	13.79	3.71	11.94	3	15
Pedro Miguel	14.19	14.42	5.52	10.46	4	21
Rio Grande	9.27	11.69	4.03	9.73	7	20
Central Section–						
Culebra	9.44	11.16	4.25	8.92	20	22
Camacho	10.52	12.11	4.62	10.58	5	21
Empire	7.84	10.14	5.92	8.24	8	24
Gamboa	9.55	12.08	6.98	9.63	30	27
Alhajuela	19.73	13.62	10.53	12.92	1[illegible]	25
El Vigia	16.93	12.02	12.11	13.69	3	27
Gorgona	.....	12.91	7.21	8.76	7	23
San Pablo	10.80	10.38	5.47	9.63	5	25
Tabernilla	11.16	10.15	4.81	9.13	4	27
Bohio	12.31	11.75	6.96	12.14	17	26
Trinidad	14.86	11.11	8.79	10.90	4	19
Monte Lirio	12.36	16.30	11.43	13.64	4	28
Atlantic Section–						
Gatun	16.35	11.41	14.72	13.61	6	24
Brazos Brook	18.63	11.86	16.10	15.24	5	26
Cristobal	17.49	13.63	15.58	13.29	41	24
Porto Bello	17.70	15.25	18.04	17.00	4	24
Nombre de D	18.02	......	12.65	15.34	2	21

Work of Unloaders in June.

The following is a statement of the number of Lidgerwood cars unloaded by the Central Division during the month of June:

LOCATION.	No. of unloaders.	No. of trains.	No. of cars.
Balboa	3	1,042	20,840
Miraflores	3	750	15,000
Gamboa	4	1,099	23,079
Total	10	2,891	58,919

OFFICIAL CIRCULARS.

Rate of Pay for European Laborers.

CULEBRA, C. Z., July 5, 1911.

CIRCULAR No. 229-R:

Effective this date, European laborers will be paid twenty cents gold per hour from the date they enter the service. Only able-bodied men, not under twenty-one years of age, will be accepted at this rate.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Commissary Coupon Books.

CULEBRA, C. Z., July 8, 1911.

CIRCULAR No. 256-D:

Effective this date, the provision of Circular No. 256, requiring that commissary coupon books needed during the month shall be obtained, as far as practicable, at one time, is suspended, and, until further notice, requests for commissary coupon books may be made by employes at any time during the month, subject to the restriction as to the issue of such books on the last two and the first four days of each month. In all other respects Circular No. 256 will continue in force.

GEO. W. GOETHALS,
Chairman, Isthmian Canal Commission.
President, Panama Railroad Company.

Signatures on Pay Certificates.

EMPIRE, C. Z., July 1, 1911.

To All Departments:

I regret to inform you that there seems to be a general lack of care in signing pay certificates, for which timekeepers are responsible, especially in the following particulars:

1. On both gold and silver rolls sufficient care is not taken to see that signatures agree with the name written in the body of the receipt.

2. On silver rolls, men designated as clerks present pay receipts signed by mark, which, on the face of it, is contradictory, for, if they are clerks, and are not able to sign their names, they are not competent as such.

It is impossible for the pay force to catch this at time of payment, but certainly timekeepers are aware that these men, with whom they are daily working, are carried as clerks, and their autographic signatures required. This has necessitated the rewriting of many tickets, and their return each month for proper signature after payment. The fact that they continue to be presented is absolute evidence that there is not sufficient care used in the timekeeping offices.

A great many of the timekeepers are especially careless in signing pay certificates by mark, writing the name wrongly, or in such a careless manner as to be practically illegible, and, in place of writing legibly $\left\{\begin{array}{c}\text{His}\\ \text{X}\\ \text{Mark}\end{array}\right\}$ will simply make some lines which cannot be identified as "His mark" at all. These words must be plainly written out in the manner prescribed in the timekeeping instructions for mark signatures, as covered in Section 123.

In order not to delay payment, a great deal of this careless work has been passed on the pay car, which necessitated the making of hundreds of new tickets and their return, after payment, for proper signature. This should not be, and the amount of careless work at the present time shows that our past practice has simply resulted in an increase of carelessness. Attention is invited to the fact that, in future, all such pay certificates presented for payment will be promptly returned to the timekeeper for rewriting of pay certificate and proper signature. Delay to the work, and dissatisfaction incident thereto, will be prevented by the timekeepers using care in seeing that pay receipts are properly signed before presentation.

Kindly see that every one concerned has due notice in your department.

Respectfully,
EDWARD J. WILLIAMS, *Disbursing Officer.*
Approved: GEO. W. GOETHALS, *Chairman.*

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, July 8, 1911. All heights are in feet above mean sea level.

DAY AND DATE.	STATION.				
	Vigia.	Alhajuela.	Gamboa.	Bohio.	Gatun Lake.
Sun., July 2	130.0	95.4	46.8	16.3	16.1
Mon., July 3	128.2	94.3	47.8	16.3	16.0
Tues., July 4	130.7	95.5	47.3	16.3	16.0
Wed., July 5	141.4	103.0	58.2	20.3	17.2
Thurs., July 6	132.3	97.9	58.3	22.9	19.0
Fri., July 7	133.2	97.8	51.8	20.8	19.4
Sat., July 8	134.2	98.2	51.5	20.0	19.4
Height of low water	125.0	92.0	44.0		

COMMISSARY DEPARTMENT.

The hours during which the commissaries are open are, as follows:

Cristobal and Culebra, 8 a. m. to 12.30 p. m.; 2 p. m. to 7 p. m.

All other commissaries, 8 a. m. to 1 p. m.; 3 p m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning July 11.

FRESH MEATS.	*Price.*
Mutton—Stewing per pound	6
Shoulder, neck trimmed off, (4 pounds and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing, per pound	10
Shoulder, for roasting (not under 4 pounds), per pound	12½
Chops, shoulder, per pound	16
Chops, per pound	24
Loin, for roasting, per pound	24
Cutlets, per pound	28
Pork—Loin chops or roast, per pound	14
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	8
Corned, No. 1, per pound	12
Corned, No, 2, per pound	10
Chuck roast (3 pounds and over), per pound	12
Pot roast, per pound	12½
Rib roast, second cut (not under 3½ pounds), per pound	16
Rib roast, first cut (not under 3 pounds), per pound	18
Sirloin roast, per pound	19
Rump roast, per pound	19
Porterhouse roast, per pound	20
Steak, chuck, per pound	12½
Round, per pound	13
Rib, per pound	18
Sirloin, per pound	19
Rump, per pound	19
Porterhouse (not less than 1½ pounds), per pound	20
Tenderloin (Western), per pound	24

MISCELLANEOUS.	
Caviare, Russian per tin	47, 89
Livers—Beef, per pound	7
Calf, each	60
Half, each	30
Sausage—Pork, per pound	17
Bologna, per pound	10
Frankfurter, per pound	12
Lieberwurst, per pound	10
Devonshire Farm	17
Sweetbread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	†26
one-half dozen only	†14
Bluefish, fresh, per pound	14
Halibut, fresh, per pound	15
Shads, fresh, each	70
Shad roes, fresh, per pair	35

POULTRY AND GAME.	
Chickens—Fancy roasting, milk fed, large, each	1.25
Fancy roasting, milk fed, med., each	1.00
Fancy roasting, corn fed, about 4½ pounds, each	90
Fowls, each 60, 70, 80, 90,	1.00
Ducks, Western, about 4½ pounds, each	1.00
Broilers, milk fed, each	60
corn fed, each	55
Turkeys, per pound	26
Squabs, each	35
Capons	2.10
Fryers, corn fed	60
Partridges, each	50
Grouse, each	50

CURED AND PICKLED MEATS.	
Ham—German, Westphalia, per pound	36
Sugar cured, per pound	18
Sliced, per pound	20
Half, for boiling, per pound	19
Boiled, per pound	22
Hocks, per pound	‡8
Bacon—Breakfast, whole piece, per pound	22
Breakfast, sliced, per pound	23
Pork, salt family, per pound	14
Ox Tongues each	1.00
Pig's feet, per pound	9
Tongues, per pound	14
Sliced bacon in 1-pound tins, per tin	30
In 1-pound jars, per jar	30

DAIRY PRODUCTS.	*Price.*
Butter—Creamery special, per pound	30
Cheese—Roquefort, per pound	38
Philadelphia cream, cake	18
Young America, per pound	18
Swiss, per pound	26
Edam, each	1.00
Edam, in tins, tin	25
Camembert, in small tins, tin	14
Neufchatel, cake	6
Gouda, per pound	34
Milk (Certified), per bottle	**25
Buttermilk, bottle	**15
Ice cream, quart	‡25
½-gallon	‡50

VEGETABLES AND FRUITS.	
Beets, per pound	6
Celery, per head	10
Corn, green, per doz	24
Cabbage, per pound	4
Cucumbers, per pound	10
Egg plant, per pound	07
Lettuce, per pound	10
Onions, per pound	5
Potatoes, white, per pound	3½
sweet, per pound	2
Rhubarb, per pound	5
Turnips, per pound	4
Tomatoes, per pound	8
Yams, per pound	3
Apples, fancy table, per pound	10
Cantaloupes, each	7
Lemons, dozen	24
Limes, per 100	80
Oranges, Jamaica, per dozen	12
Oranges, California, per dozen	36
Watermelons, each	30

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*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries: no orders taken for delivery.

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal, Colon, and Balboa, during the week ending July 8:

Cristobal, July 1, from New York, with 41,520 barrels cement for Atlantic and Pacific Divisions.

Peru, July 2, from San Francisco, with 675 pieces lumber, for stock.

Turrialba, July 6, from New Orleans, with 143 pieces lumber, 52 packages switch stands, 5 cases clamps, 5 pieces castings, for stock; 24 pieces castings for (Balboa store) Pacific Division; 12 packages springs for Atlantic Division.

Almirante, July 7, from New York, with 60 bales oakum, 250 bundles wire, 10 reels steel cable, 100 drums kerosene, 5 cases steel tubing, for stock.

San Mateo, July 7, from Philadelphia, with 155 drums gasoline, for stock.

Advance, July 7, from New York, with 12 bundles leather, 78 drums oil, 150 bundles wire, 24 crates stove pipe, 150 cases soap, 5 cases fusees, 200 cases sapolio, 218 kegs rivets and bolts, 42 cases lanterns, 40 pieces lumber, for stock; 317 pieces castings for Mechanical Division; and a miscellaneous cargo, the whole consisting of 1,290 packages, weighing 105 tons.

Misdirected Letters.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received in the office of the Director of Posts, and may be secured upon request of addressee:

Baron, F. A.
Barton, R. C.
Brown, Warren E.
Burrow, J. O.
Coleman, Miss Mabel
Cunningham, J. A.
Curtis, Karl P.
Dauphine, E. C.
Donir, C. L.
Droughom, Coar
Duncan, Charles
Fitzgerald, Joseph S.
Flaherty, Michael
Hamilton, A. H.
Healey, S. W.
Higley, Homer L.
Hoggatt, Anthony N.
Holman, F. R.
Hurtado, Ismael
Jasper, Grover R.
Kent, Mrs. T. L.
Langford, W. H.
Lissis, John
Lutz, Mrs, Chas. A.
Malsby, L. W.
Mayland, Jerome
Moeller, Leonard
Myers, Walter S.
O'Donnell, Ambrose
Oliver, Emil A.
Perkins, Mrs. S. (2d class)
Pierson, Harry W.
Pringle, W. A., Jr.
Scott, A.
Stroebel, Louis

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending July 19, 1911, (75th meridian time):

DATE.	High.	Low.	High.	Low.	High.
	A.M.	A.M.	P.M.	P.M.	P.M.
July 13	5.02	11.15	5.08	11.30	
July 14	5.35	11.52	5.45	......	......
			A.M.		
July 15	......	12.05	6.10	12.30	6.21
July 16	......	12.43	6.47	1.10	7.00
July 17	......	1.22	7.27	1.51	7 42
July 18	......	2.03	8.08	2.38	8.28
July 19	......	2.50	8.55	3.25	9.20

The following vessels arrived at or departed from the port of Balboa during the week ending July 8:

Arrivals—July 2, *Belle of Spain*, from San Francisco; *Newport*, from San Francisco; *Lansing*, from Port Harford; July 3, *Ucayali*, from Callao; July 4, *Ecuador*, from Guayaquil; July 5, *Manavi*, from Buenaventura; *Aysen*, from Valparaiso.

Departures—July 2, *Henry Villard*, to San Francisco; *G. W. Fenwick*, to San Francisco; July 3, *Guatemala*, to Valparaiso; July 5, *Belle of Spain*, to south ports; *Lansing*, to Port Harford.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to changes.

NEW YORK TO CRISTOBAL.			
Ancon	P. R. R.	Monday	July 10
Allianca	P. R. R.	Thursday	July 13
Panama	P. R. R.	Wednesday	July 19
Advance	P. R. R.	Tuesday	July 25
Colon	P. R. R.	Monday	July 31
Allianca	P. R. R.	Saturday	Aug. 5
Panama	P. R. R.	Saturday	Aug. 12
Advance	P. R. R.	Friday	Aug. 18
Colon	P. R. R.	Thursday	Aug. 24
Allianca	P. R. R.	Wednesday	Aug. 30
Panama	P. R. R.	Tuesday	Sept. 5
Advance	P. R. R.	Monday	Sept. 11
Colon	P. R. R.	Monday	Sept. 18
Allianca	P. R. R.	Saturday	Sept. 23

CRISTOBAL TO NEW YORK.			
Colon	P. R. R.	Wednesday	July 19
Allianca	P. R. R.	Tuesday	July 25
Panama	P. R. R.	Monday	July 31
Advance	P. R. R.	Sunday	Aug. 6
Colon	P. R. R.	Saturday	Aug. 12
Allianca	P. R. R.	Friday	Aug. 18
Panama	P. R. R.	Thursday	Aug. 24
Advance	P. R. R.	Wednesday	Aug. 30
Colon	P. R. R.	Tuesday	Sept. 5
Allianca	P. R. R.	Monday	Sept. 11
Panama	P. R. R.	Sunday	Sept. 17
Advance	P. R. R.	Saturday	Sept. 23

NEW YORK TO COLON.			
Santa Marta	U. F. C.	Thursday	July 6
Prinz Sigismund	H.-A.	Friday	July 7
Clyde	R. M.	Saturday	July 8
Metapan	U. F. C.	Thursday	July 13
Prinz Joachim	H.-A.	Saturday	July 15
Zacapa	U. F. C.	Thursday	July 20
Prinz Eitel Friedrich	H.-A.	Friday	July 21
Atrato	R. M.	Saturday	July 22
Almirante	U. F. C.	Thursday	July 27
Prinz Aug. Wilhelm	H.-A.	Saturday	July 29
Santa Marta	U. F. C.	Thursday	Aug. 3
Prinz Sigismund	H.-A.	Friday	Aug. 4
Thames	R. M.	Saturday	Aug. 5
Metapan	U. F. C.	Thursday	Aug. 10
Prinz Joachim	H.-A.	Saturday	Aug. 12

COLON TO NEW YORK.			
Almirante	U. F. C.	Thursday	July 13
Prinz Aug. Wilhelm	H.-A.	Tuesday	July 18
Santa Marta	U. F. C.	Thursday	July 20
Prinz Sigismund	H.-A.	Saturday	July 22
Thames	R. M.	Tuesday	July 25
Metapan	U. F. C.	Thursday	July 27
Prinz Joachim	H.-A.	Tuesday	Aug. 1
Zacapa	U. F. C.	Thursday	Aug. 3
Prinz Eitel Friedrich	H.-A.	Saturday	Aug. 5
Almirante	U. F. C.	Thursday	Aug. 10
Prinz Aug. Wilhelm	H.-A.	Tuesday	Aug. 15

NEW ORLEANS TO COLON.			
Abangarez	U. F. C.	Saturday	July 8
Atenas	U. F. C.	Saturday	July 15
Turrialba	U. F. C.	Saturday	July 22
Abangarez	U. F. C.	Saturday	July 29
Atenas	U. F. C.	Saturday	Aug. 5
Turrialba	U. F. C.	Saturday	Aug. 12

COLON TO NEW ORLEANS.			
Turrialba	U. F. C.	Thursday	July 13
Abangarez	U. F. C.	Thursday	July 20
Atenas	U. F. C.	Thursday	July 27
Turrialba	U. F. C.	Thursday	Aug. 3
Abangarez	U. F. C.	Thursday	Aug. 10
Atenas	U. F. C.	Thursday	Aug. 17

Hamburg-American steamers leave Colon for New York via Kingston at 10 a. m. on sailing dates. The *Prinz August Wilhelm* and *Prinz Joachim* call at Santiago de Cuba, on both outward and homeward voyages. A ship will leave Colon for Bocas del Toro at 5 p. m. on July 12, and August 9; and for Port Limon at 5 p. m., on July 12, July 26, and August 9.

The Leyland line steamer *William Cliff* sails for New Orleans, via Port Limon, on or about July 29.

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships for New York via Kingston on Thursday at 11 a. m.; for Bocas del Toro on Monday at 6 p. m.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, JULY 19, 1911. No. 47.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Chairman's Report.

The report of the Chairman of the Isthmian Canal Commission for the month of June is published in full in other columns of this issue of THE CANAL RECORD. It gives a detailed account of the progress of Canal work in all departments and divisions.

Work North of Gatun Locks.

Work has been begun on a coffer-dam which will be built across the north end of the lower lock at Gatun to prevent water from entering the lock pit during the removal of an earthen dike, containing about 500,000 cubic yards of material, which now serves as the only barrier. The arrangement will also permit of an uninterrupted continuance of operations within the lock while the removal of the dike is in progress. The site of the dam will be at the caisson sill of the lock, and the structure will be built of sheet piling, caulked and battened, supported by concrete piers, 43 feet high and 18 inches thick, spaced 10 feet from center to center It will be of sufficient strength to resist a 40-foot head of water, which is about the depth of the existing artificial basin, north of the lock. When the dam is completed, a suction dredge will be brought up the French canal and through a small channel connecting it with the basin, and set to work on the dike, the material being wasted to one side. When the dredge has finished operations, it will be removed, the open water channel closed, and the pit unwatered and cleaned out, after which, the work of constructing the approach wall can be started. There will be no further use for the coffer-dam after the water has been pumped out of the basin, and it will be taken down, the piers being blasted to pieces.

Hardwood Ties.

About 8,000 hardwood ties have been received by the Panama Railroad Company to date, for use on the permanent line. These ties are purchased in Colombia, and are shipped via the Royal Mail Steam Packet Company's vessels from the ports of Savanilla and Barranquilla. The majority of the ties are hewn from guaiacum, or lignum vitae, but three other classes of hardwood are accepted, namely, polvillo, corteza, and balsamo. On account of the hardness of the wood, the ties have to be bored for the spike. A special tie-boring and gaining machine is used, which adzes two parallel faces to form the seat for the tie plate, and bores a hole to receive the spike. A patent tie plate and screw spike are used. This equipment holds the rails to absolute gage, and guards against a tendency for the rails to spread. A good many of the softwood ties on the permanent track between Panama and Corozal have been replaced with hardwood, and the same equipment has been extended to other sections of the permanent, or relocated line, where 90-pound rails are being laid.

Dredge No. 6 to be Raised.

After raising, an attempt will be made to repair ladder dredge *No. 6*, which sank on June 19, in the Canal channel, near its intersection with the French canal. In going down, the vessel turned over on its side, and now lies in such a position that its tumblers are lower down than the hull, making its raising a difficult matter. The dredge has been in service for the greater part of 26 years, and many of the plates in its hull were in bad condition. It was valued at $35,000.

Widening Stalls in Panama Railroad Corral.

One hundred and forty-four stalls, out of a total of 256, in the Panama Railroad Company's corral on the Mount Hope road, will be widened from four feet to five feet four inches, by removing every fourth post and partition. The change is made to furnish better accommodation for the larger animals, and it will reduce the number of stalls in this part of the corral from 144 to 108, a loss of 36. This is partly offset by an increase in the monthly rental from $2.50 to $3, the net monetary loss, providing all the enlarged stalls are occupied, being $36 monthly. The remaining 4-foot stalls, to the number of 112, are principally rented by East Indian and colored cartmen, whose animals are uniformly undersized, and have plenty of room in their present accommodations.

Visit of the Secretary of War.

The Secretary of War, Henry L. Stimson, accompanied by Mrs. Stimson, his secretary, W. R. Pedigo, and Brigadier General Clarence Edwards, Chief of the Bureau of Insular Affairs, arrived on the Isthmus on the *Santa Marta*, July 13, and is the guest of Col. Goethals at Culebra. On July 13, he walked through the south half of Culebra Cut from Pedro Miguel Locks to Empire, and climbed the 106 steps that lead from the excavation to the hill on which the division office is situated. That afternoon, he made a formal call on President Arosemena in Panama. On July 15, he walked through the north half of Culebra Cut from Empire to Matachin, and that evening attended the benefit for the sufferers from the wreck of the steamship *Taboga* at the National Theatre in Panama. On July 17, he spent the morning at Gatun Locks and Dam, and in the afternoon attended a reception in honor of himself and Mrs. Stimson, tendered by President Arosemena at the Presidencia in Panama. On July 18, he inspected the work at the Atlantic entrance to the Canal, and in and about Colon. On July 19, he will inspect the work of the Pacific Division. It is planned to leave the Isthmus on the battleship *North Carolina*, now at anchor in Limon Bay, on Sunday, July 23, for Porto Rico, whence the Secretary and his party will go to Havana, making a short stop en route at Santo Domingo. Brigadier General E. H. Crowder, Judge Advocate General of the Army, who arrived on the Isthmus on July 18, will accompany Secretary Stimson to Porto Rico and Cuba.

Atlantic Terminal Work.

Two lines of trestle have been started, the work of filling has been begun, and the first of the steel cylinders for the dock foundation is being driven in connection with the construction of the Atlantic terminal at Cristobal. One of the trestles has been extended for a distance of about 1,000 feet into the harbor, following the line of the proposed mole; the other parallels the water front, and extends along the site of the first of the five reinforced concrete docks.

The material for the fill is obtained from one of the small hills, east of the Mount Hope road, where a borrow pit was recently opened. One steam shovel is now at work there, and another will be added as the filling increases. Three trains are employed in transporting the material, and about 1,400 cubic yards are excavated and dumped daily, the greater part of it at present, however, being used in making the fill back of the new sea wall on Colon beach. The material procured from the hill is a mixture of earth and argillaceous sandstone.

The work of sinking the preliminary steel cylinder was begun on Monday, July 10, on the site of the first dock. The method employed is to sink a 25-foot section of the cylinder into the bottom of the harbor, then to bolt on a 5-foot section, driving it down until the top is about two feet above water level, and repeating the operation. The cylinder is forced downward by the blows of a pile driver hammer striking a hardwood buffer placed over the top of it. The steel sections, now used, are put together at Gorgona shops, but the greater part of this material will be purchased in the States, assembled there, and shipped to the Isthmus ready to be bolted on. The present cylinder is being driven through a coral rock formation, and will reach solid bottom at a depth of about

NOTES OF PROGRESS.

(*Continued.*)

46 feet. When sunk, the material from the inside will be removed, and the space filled with concrete.

A track system in connection with the dock construction work has been laid from the Cristobal yards, through a section of the settlement, to the beach, where the track branches off, one line going out on either trestle. A temporary track has also been laid along Roosevelt avenue, thereby closing it to traffic, for the purpose of removing the concrete blocks, which formed a protection wall along the Cristobal water front. Some of these blocks are being put to temporary use in front of the proposed sea wall on Colon beach, to form a barrier against heavy seas while the work is going on. They will be returned, after they have served their purpose, and used with the others in making a facing on the land side of the new docks.

A new 13-lever interlocking plant, which will operate five switches, three locks, and six signals, has been installed at Cristobal, in connection with the track system, and another 8-lever plant will be established near the line leading out from the borrow pit.

Gatun Dam Spillway.

The concrete work in the Spillway of Gatun Dam is over 64 per cent completed, 145,542 cubic yards, out of a total of 225,000, having been placed at the close of work on July 15. A statement of the amount laid each working day last week, and of the total in place, follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
July 10	306	8.15	1
July 11	156	6.00	1
July 12	220	8.00	1
July 13	220	7.10	1
July 14	221	7.30	2
July 15	226	7.30	1
Total	1,349	44.25	1.17
Previously reported	144,193		
Grand total	145,542		

Ancon Crusher.

A statement of the rock crushed at Ancon quarry during the week ending July 15, follows:

DATE.	Hours worked.	Cubic Yards.
July 10	7.00	2,613
July 11	7.25	2,735
July 12	8.00	2,878
July 13	7.00	2,116
July 14	5.40	2,379
July 15	6.40	2,434
Total	41.45	15,155

Stowaways Become Canal Laborers.

Sixty-five stowaways, 52 from Trinidad, and 13 from Barbados, were brought into port at Colon on Thursday, July 13, by the *Atrato* of the Royal Mail Steam Packet Company. Under the Panamanian immigration law, adult immigrants, except contract laborers for the Canal work, must have $15, United States currency, or its equivalent, in their possession before being entitled to land. The stowaways could not comply with this requirement, and the agent of the steamship company gave a bond of $100, United States currency, for each of them. In the transfer to shore, seven managed to make their escape unseen, and the bonds in their case, aggregating $700, became forfeited. The remaining 58 men were kept in the railroad warehouse under police surveillance until Friday afternoon, when the Quartermaster's Department of the Canal Commission offered to take them over, provided all charges against them for passage, and other expenses, were removed. The offer was accepted, and the men were assigned to work.

The *Atrato* also brought 50 contract laborers, recruited in the West Indies, for the Canal force. This is the first lot of laborers to arrive on the Isthmus under contract since January, 1910.

CONCRETE WORK IN THE LOCKS.

About 58 per cent of the concrete for all the locks is in place, the amount at the close of work on July 15 being 2,444,131¼ cubic yards, out of a total of approximately 4,284,400. A total of 30,515¾ cubic yards of concrete was laid in the locks during the week ending July 15.

GATUN LOCKS.

Over 70 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of the work on July 15 being 1,461,225¼ cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each working day for the week ending July 15, and of the total, follows; and a similar statement for the work in the Spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
July 10	2,004	34.51	8	658	7.56	2	244	2,906
July 11	1,982	32.17	6	762	8.44	2	188	2,932
July 12	2,444	39.20	8	798	7.40	2	252	3,494
July 13	2,190	34.20	6	552	8.40	2	170	2,912
July 14	1,784	29.10	6	678	8.40	2	193¾	2,655¾
July 15	1,758	28.26	6	594	8.10	2	216	2,568
*Portable mixers				342½				342½
Total	12,162	198.24	6.66	4,384½	49.50	2	1,263¾	17,810¼
Previously reported								1,443,415
Grand total								1,461,225¼

*The 342½ yards shown for the portable mixers are reinforced concrete, and were placed on the following days: July 10th, 50; July 11th, 50½; July 12th, 66; July 13th, 39½; July 14th, 82; July 15th, 54½.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is about 81 per cent completed, 684,456 cubic yards, out of a total of 837,400, having been placed at the close of work on July 15. The record for each of the six 8-hour working days of last week, follows:

DATE.	AUXILIARY PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. ½-cubic yard mixer.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
July 10	648	16.50	3	212	13.50	2		860
July 11	752	12.75	3	198	12.00	3		950
July 12	644	16.00	3	236	16.50	3		880
July 13	732	18.00	3	238	21.75	3	2	972
July 14	400	12.00	3	252	20.25	3	7	659
July 15	354	10.00	2	253	21.00	3		607
Total	3,530	85.25	2.83	1,389	105.00	2.83	9	4,928
Previously reported							4,406	679,528
Grand total							4,415	684,456

MIRAFLORES LOCKS.

About 22 per cent of the concrete for the system of two twin locks at Miraflores was in place on July 15, the total amount on that date being 298,450 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. ½-cubic yard mixer.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
July 10	934	24.83	4				207	16.00	2		1,141
July 11	1,010	18.17	4				241	20.00	3		1,251
July 12	686	16.33	4				165	13.00	3		851
July 13	830	18.33	4	92	2.50	2	118	10.50	2		1,040
July 14	1,110	20.50	4	430	12.00	2	222	20.50	3		1,762
July 15	1,058	20.17	4	436	10.00	2	238	19.50	3		1,732
Total	5,628	118.33	4	958	24.50	1	1,191	99.50	2.67		7,777
Previously reported										3,693	290,673
Grand total										3,693	298,450

SOCIAL LIFE OF THE ZONE.

Church Work.

The quarterly meeting of the Isthmian Sunday School Association, with an election of officers, was held in Gorgona on Sunday afternoon, July 9. There were present the officers of the association and three delegates from each of the federated schools. An address was delivered by the Rev. Harry Compton, and the subject discussed was the relation of the Sunday school superintendent to the school. Messrs. Putnam and Marsh were the leaders. Officers were elected, as follows: President, Rev. A. A. Nellis of Empire; vice-president, A. H. Warner of Culebra; secretary, E. G. Putnam of Cristobal; treasurer, J. H. Marsh of Gorgona.

The Isthmian Ministers' Association held a conference at the Methodist college, Panama, on Monday afternoon, July 10. Mr. Victor Kennedy was the speaker. There were eight members of the association present. The next meeting will be held in the Baptist church, near the railroad, Culebra, on Monday, August 7. The association distributes literature on moral issues.

Thirty-five pupils of the Union Sunday school, Cristobal, have been presented with Bibles as reward for regular attendance since the beginning of the year. The Sunday school has a large membership, and an average attendance of 100.

The Ladies' Aid Society of the Union Church has taken up the study of missionary work in the Orient. The society has 25 members, with Mrs. W. T. Harrison as president.

The meeting of the Ladies' Aid Society of the Methodist Episcopal Church, Panama, will be held at the home of Mrs. E. M. Keyser in Ancon, on Thursday afternoon, July 20, at 2.30 o'clock.

Social Work in Colon.

The municipal authorities of Colon promulgated a decree on July 6, whereby all minors of 18 years old and under, are ordered to be taken to the Colon Hospital for examination of the throat, in connection with the current mild epidemic of diptheria in the city. Special sanitary rules have also been issued to insure against spread of the disease, and the health office at Cristobal has circulated a list of rules giving preventive measures, prohibiting the use of common drinking cups, and promiscuous handling of infected articles by children. In accordance with an order issued by the Colon authorities, the common drinking cup is to be abolished in the schools of the city, and each pupil will be required to furnish an individual cup, as in the Canal Zone schools. At the Fourth of July dance at the Lincoln House, Colon, the committee furnished 2,000 asceptic drinking cups as a preventive and sanitary measure.

The next free lecture for the people of Colon will be held in the schoolroom of Christ church on Thursday evening, July 27. All persons interested in these lectures on practical sanitation and other instructive subjects are invited to attend. Seats are reserved for Americans. The lecture will be delivered by one of the physicians of the Colon Hospital staff.

Vacation School in Gatun.

The first vacation school in the Canal Zone was opened in the schoolroom in Gatun on July 3, with 30 pupils. Sessions are held every morning, with the exception of Saturday, from 8.30 to 11.30 o'clock. On Mondays, Wednesdays, and Fridays, kindergarten classes are held in the afternoon. The school will close on August 8.

Odd Fellows Installation.

The following officers of Pacific Lodge, No. 4, Independent Order of Odd Fellows, were installed by District Deputy Grand Sire B. F. Sisson of Gatun, on Thursday evening, July 13: Noble grand, J. S. George; vice-grand, A. S. Curtis; treasurer, Joseph Turrell; warden, C. C. J. Wirz; conductor, F. T. Hamlin; right supporter to noble grand, Karl P. Curtis; left supporter to noble grand, E. M. Keyser; chaplain, James Wilson; right scene supporter, James O'Malley; left scene supporter, J. H. Williams; right supporter to vice-grand, W. C. Haskins; left supporter to vice-grand, E. G. Mettke; inner guard, A. A Lundescheft. In the course of remarks, the district deputy announced that a petition had been forwarded to the sovereign grand lodge for the transfer of Canal Zone Lodge, No. 3, from Culebra to Empire. There are only a few members of this lodge living at Culebra, and it is believed that the new location will not only be more central, but that the change will result in an increased membership. Mr. Sisson, who has general charge of Odd Fellow affairs on the Isthmus, has just finished his fourth year as district deputy grand sire.

PERSONAL.

Major General Leonard Wood, wife, and two children; Brigadier General William H. Bixby and wife, Brigadier General W. W. Wotherspoon and wife, Brigadier General E. M. Weaver and wife, Brigadier General E. H. Crowder, Major E. E. Winslow, Major E. P. O'Hern, Captain F. R. McCoy, Captain S. D. Embick and wife, and Lieut. H. C. Fiske of the Army, and Captain W. J. Maxwell of the Navy, arrived at Cristobal on the *Ancon* on July 19.

Col. W. C. Gorgas returned from his leave of absence on the *Santa Marta*, which arrived at Colon, from New York, on July 13.

Lieut.-Col. C.de W. Willcox, U.S.A., and wife, arrived on the Isthmus on the *Colon* on July 13.

Lieut.-Col. Guy L. Edie, Medical Corps, U. S. A., is a passenger on the *Allianca* from New York, due to arrive at Cristobal on July 19.

Electricity on a Battleship.

At the next regular meeting of Local Union, No. 677, I. B. E. W., to be held at Gatun on Wednesday, July 26, at 8 p. m., John Lloyd will speak on the subject, "Electrical organization and equipment of a United States battleship," after which refreshments will be served.

Steam Shovel Men.

The next regular meeting of Panama Local, No. 5, A. U. of S. S. M., will be held in Culebra lodge hall on Sunday, July 23, at 2.30 p. m. All members are requested to attend.

EDW. FENSTERMACHER,
Secretary-Treasurer.

CULEBRA, C. Z., July 14, 1911.

FOUND—A lady's pin on the floor of the Lincoln House on the night of the Fourth of July dance. Owner can obtain same by applying by letter or in person at the office of Superintendent, Panama Railroad Company, Colon, R. P., describing property fully.

EXECUTIVE ORDER.

Licenses for Lots in Townships.

By virtue of the authority vested in me, the Chairman and Chief Engineer of the Isthmian Canal Commission is hereby authorized to execute revocable licenses for lots in townsites in the Canal Zone, either directly, or through such agency as he may direct, such licenses to be revocable at the pleasure of the Chairman and Chief Engineer, or such other executive officer as may be in charge in the Canal Zone, licensees to vacate and remove improvements at once without indemnity.

WM. H. TAFT.

THE WHITE HOUSE,
June 28, 1911.

[No. 1380.]

Porto Bello Crusher.

A statement of the work done at the Porto Bello crusher, by days, for the two weeks ending July 15, follows:

DATE.	Hours worked.	Cubic Yards.
July 3	4.24	2,016
July 4 (Holiday)	....	....
July 5	3.41	1,732
July 6	3.53	1,640
July 7	3.09	1,546
July 8	2.29	1,179
Total	17.36	8,113

DATE.	Hours worked.	Cubic Yards.
July 10	5.13	1,478
July 11	6.17	1,431
July 12	6.33	1,793
July 13	6.56	1,556
July 14	3.44	1,340
July 15	4.50	1,779
Total	33.33	9,377

Seeks Injunction Against P. R. R.

Application for an injunction against the Panama Railroad Company has been made by Horatio L. Stevenson of Colon in the Circuit Court of the Third Judicial Circuit at Cristobal. The applicant seeks to procure a restraining order to prevent the railroad company from removing spoil from a hill, east of the Mount Hope road, claiming he has property rights there. The material is being used for filling on the site of the new docks at Cristobal, and in front of the Washington Hotel at Colon. The argument on the application will be held before Judge Thomas E. Brown, Jr., on Thursday, July 20.

Obituary.

Mrs. Edwin P. Drake died at her residence in Empire on July 17 after an illness of one week. She was born in North Dakota, and was 30 years of age. Her husband, who is employed in the Disbursing Office, and two children, survive her.

Charles Guertler, who left the Canal service in December last, after having been employed in the power plant and on the unloading cableways at Gatun, died at the Cumberland street hospital in Brooklyn, on April 29, from a fractured skull, sustained either from a fall, or from a blow on the head. He was 38 years of age. His wife, and a sister, survive him.

Killed by a Fall from Train.

Benjamin Reid, a Jamaican, 45 years of age, nonemploye, was run over and killed by freight train No. 658 at about 10 p. m., Friday, July 14, near Mount Hope, where he lived. A coroner's jury returned a verdict that death was caused by a fall from the train while riding on it without authority.

CANAL WORK IN JUNE.

Monthly Report of the Chairman and Chief Engineer to the Secretary of War.

CULEBRA, C. Z., July 15, 1911.

The Honorable the Secretary of War,
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of June, 1911:

Department of Construction and Engineering.

The following table summarizes the principal items of construction work accomplished by the Atlantic, Central, and Pacific Divisions during the month:

ITEM.	Unit.	Atlantic.	Central.	Pacific.	Total.
Work excavation, dry	Cubic yards	63,997	1,403,448	120,943	1,588,388
Work excavation, wet	Cubic yards	452,098	29,856	576,100	1,058,054
Total work excavation	Cubic yards	516,095	1,433,304	697,043	2,646,442
Plant excavation, dry	Cubic yards	....	....	....	....
Plant excavation, wet	Cubic yards	....	....	....	....
Total plant excavation	Cubic yards	....	....	....	....
Total Canal excavation	Cubic yards	....	....	....	....
Material placed in dams	Cubic yards	660,004	....	82,173	742,177
Concrete placed in locks and dams	Cubic yards	60,135	....	44,779	104,914
Explosives used	Tons (Gross)	82.32	202.03	33.35	317.70
Rock drilled	Feet	58,976	425,306	80,229	564,511
Tracks removed	Miles	....	8.74	....	8.74
New tracks laid	Miles	1.77	15.20	4.19	21.16
Rock crushed	Cubic yards	60,704	....	62,997	123,701
Cement used	Barrels	61,681	320	46,496	108,497
New roads built	Miles	0.76	3.18	....	3.94
Water mains laid	Feet	5,087	1,009	1,942	8,038
Sewers laid	Feet	1,135	938	....	2,073
Open drains and ditches dug	Feet	48,770	100	7,665	56,535
Average daily force	....	6,910	7,553	4,456	18,919
Average rainfall	Inches	15.15	5.70	4.87	7.14

Atlantic Division.

GATUN LOCKS.

Crane excavation in the lower lock, and shovel excavation for obtaining clay for back fill, were continued. A total of 4,725 cubic yards were removed by crane, and 8,067 cubic yards by shovel. On June 30, the total excavation amounted to 5,869,271 cubic yards, of which 5,029,334 cubic yards were removed from the prism. The excavation in the locks was 99.6 per cent completed, and the excavation of the culvert trenches 90 per cent completed.

Back fill—Backfilling behind the walls of the upper and middle locks, and in the center wall of the upper lock, was continued, and back filling behind the walls of the lower lock was commenced. The quantity placed during June aggregated 52,013 cubic yards, increasing the total to 543,576 cubic yards. On June 30, the back filling was 33 45 per cent completed.

Receiving and Issuing Material—The receipts of all material during the month exceeded the consumption, excepc in the case of sand, where the excess of consumption over receipts amounted to 184 cubic yards.

Mixing and Placing Plants—Both plants, and all portable mixers, were kept in satisfactory operation during the month.

Power Plant and Pumps—The operation of the power plant and pumps was satisfactory.

Iron and Steel Work—During the month 508.84 tons of fixed steel, 69.5 tons of reinforcing rails, and 5,705 feet of reinforcing rods were placed.

Concrete Work—There was a decrease of 12,539 cubic yards in the amount of concrete laid, as compared with the figures for the preceding month. The daily average for the 26 working days was 2,127 cubic yards, as compared with a daily average during May of 2,609 cubic yards. The total amount of concrete placed during the month was 55.305 cubic yards, including 4,611 cubic yards of large stone. The bucket measurement exceeded the place measurement by 203¾ cubic yards. Of the total concrete, 6,473.5 cubic yards were placed in the upper lock, 6,596 cubic yards in the middle lock, and 42,235.5 cubic yards in the lower lock. The concrete work for the entire lock system was 68.3 per cent completed at the end of June.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS, GATUN LOCKS.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)	11.42	8.50
Average number of hours per day worked per strand of cableway laying concrete and large stone (actual working time)	4.51	....
Average number of mixers per day	5.50	2.00
Average hourly output per mixer, (actual working time) cu. yds.	56.30	70.97
Average amount of concrete and large stone laid per hour, per strand of cableway, (actual working time) cu. yds.	29.60	....
Large stone laid, cu. yds	2,273¼	2,338
Concrete laid, cableways, cu. yds.	27,598	....
Concrete laid, through chute into dump cars, cu. yds	8,550	....
Concrete laid, derricks, cu. yds	....	1,392
Concrete laid, dump cars, cu.yds.	....	11,966
Concrete laid, portable mixers	....	1,391½
Total amount concrete and large stone laid, cu yds	38,421¼	17,087½

Concrete from the auxiliary plant was placed by three derricks, and with dump cars.

GATUN DAM.

Construction during the month increased the total fill, as determined by cross sections of the material in place, by 660,004 cubic yards.

Cross section survey was completed of all the material in place for the purpose of determining the yardage lost by consolidation, and the total yardage still remaining to be placed to complete the Dam. This shows the net yardage in place above the original ground surface to be 14,293,034 cubic yards, a shortage of 441,782 cubic yards from the amount determined by the summation of the monthly cross sections, which only cover the material actually deposited during the month. This shortage has been charged against hydraulic fill in place, as it is probably nearly all due to consolidation of same. The net amount of material required to complete the Dam to elevation plus 115, over and above that now shown in place, is 5,089,156 cubic yards; for the gross amount necessary to complete, about 500,000 cubic yards should be added to this to cover future consolidation.

Hydraulic fill—The dredges increased the hydraulic fill by 432,008 cubic yards. Making a reduction of 441,782 cubic yards chargeable against consolidation, as shown by a complete survey of the Dam, the total hydraulic fill in place June 30 was 7,411,992 cubic yards.

Dry fill—Material received from the Central Division, the Locks, Mindi, and steam shovel No. 134, amounting to 227,996 cubic yards, was placed on the north and south toes of the Dam, east and west of the Spillway, making the total dry fill in place 6,881,042 cubic yards.

GATUN SPILLWAY.

Excavation—In preparing foundations of the Spillway dam, 115 cubic yards of rock were removed by hand. On June 30, the total spillway excavation amounted to 1,582,960 cubic yards.

Concrete—The work of placing concrete was continued, the amount placed during the month aggregating 4,830 cubic yards, which increased the total to 143,746 cubic yards. The concrete work for the Spillway was 66.1 per cent completed.

HARBOR AND CHANNEL SECTION.

Excavation Below Sea Level at Mindi—During the month, two steam shovels removed 9,659 cubic yards of earth, and 45,998 cubic yards of rock from the Canal prism. In addition, 3,500 cubic yards of earth were sluiced by pumping plant.

Dredging from the Ocean to Mindi—Five dredges removed 431,655 cubic yards of earth, and 20,443 cubic yards of rock from the Canal prism. In addition, dredge *No. 86* placed 97,149 cubic yards of material in the Colon fill. On June 30th, 40 feet of water could be carried from zero to zero plus 2,200 feet; 35 feet to mile 3 plus 800 feet; 30 feet to mile 3 plus 3,700 feet; 20 feet to mile 5 plus 2,438.9 feet, at the junction with the French canal.

PORTO BELLO.

PERFORMANCE OF ROCK CRUSHER PLANT.

Length of working days—hours From 1st to 30th, inclusive	8.00
Average number of hours worked per day	5.00
Average number of cubic yards per hour of working day	291.80
Average number of cubic yards per working hour	466.80
Maximum day's output, (6 hours 28 minutes) cu. yds	3,241.00
Average day's output (26 days) cu. yds.	2,335.00
Average hourly output, (194 hours 23 minutes) cu. yds.	312.30
Total output for the month, cu. yds.	60,704.00

Sand, Stone, and Cement Service—In connection with this service, plant steamed 7,518 miles, handled 635 barges, and carried 1,545 passengers.

West Breakwater, Colon—Forty-nine thousand, four hundred and thirty-six cubic yards of material were excavated, of which amount 47,308 cubic yards were placed in the breakwater, and 2,128 cubic yards in track fill. The double track trestle was extended 592½ linear feet. On June 30, the trestle extended 5,365 feet from shore. The total amount of rock dredged and dumped on the west breakwater to June 1, 1911, was 598,709 cubic yards. During the month, 20,443 cubic yards were dredged and dumped, increasing the total to

619,152 cubic yards. The amount of dry fill placed to July 1 was 355,868 cubic yards.

NOMBRE DE DIOS.

During the month, 50 barges, containing 23,251 cubic yards of sand, were shipped to Gatun.

MUNICIPAL ENGINEERING.

The reservoirs, water mains, sewers, roads, and oil pipe lines were maintained and extended, as required, to facilitate construction work. Work was continued on the Colon municipal improvements.

Central Division.

During the month of June, the total amount of material excavated in the Central Division was 1,433,304 cubic yards, of which 140,605 cubic yards were classified as earth, and 1,292,699 cubic yards as rock. Of this quantity, 1,399,458 cubic yards were removed by steam shovels, and 1,558 cubic yards by bucket cranes. Contractors removed 29,856 cubic yards by sluicing, and 2,432 cubic yards by hand. The total—1,433,304 cubic yards—consisted of primary excavation for the Canal prism.

The daily average number of steam shovels at work during the month was 40.92, and the total number of shovel days was 1,064, as compared with 38.62 shovels at work during the month of May, with 1,004 shovel days.

For comparison with the work done by steam shovels during the corresponding month of the previous year, the following table has been prepared:

Period.	Excavated by shovels.	Classification of material.		Av. No. of shovels at work.	W'kg days.	Av. yards per shovel day.
		Rock.	Earth.			
1910:	Cu. Yds.	Cu. Yds.	Cu. Yds.			C. Y.
June...	1,443,099	1,166,754	276,345	45.15	26	1,229.20
1911:						
June...	1,401,016	1,282,811	118,205	40.92	26	1,316 22

Rainfall at Empire: 1910, 10.17 ins.: 1911, 5.92 ins.

The above table shows the average output per shovel to be 7.08 per cent greater in June, 1911, than in the corresponding month of the previous year.

The total amount of material excavated from the prism in the Culebra section of the Central Division in June, 1911—1,401,016 cubic yards—was the highest record in that section for the month of June, the previous high record for the month having been in June, 1910, when 1,305,141 cubic yards were removed.

Due to changes in the stability of the Canal banks in the Culebra section, it has been found necessary to add 2,571,690 cubic yards to the original estimate for the completed Canal making the revised total estimated amount of material to be removed in the Central Division, 99,696,708 cubic yards, and up to July 1, 1911, 77 338,235 cubic yards had been removed, leaving 22,358,473 cubic yards to be removed, in order to complete all excavation in the Central Division. From these figures, it will be seen that 77.57 per cent of all excavation in the Central Division had been completed up to the close of the month of June and 22.43 per cent remained uncompleted.

Considering the two sections which compose the Central Division, the excavation completed, and that to be completed, at the close of June operations, was, as follows:

CULEBRA SECTION.	Cu. Yds.
Completed	65,514,865
To be completed	21,652,852

CHAGRES SECTION.	
Completed	11,823,370
To be completed	705,621

From the above figures, it will be seen that the Culebra section, locally known as the Culebra Cut, was 75.16 per cent completed, with 24.84 per cent to be completed; the Chagres section was 94.37 per cent completed, with 5.63 per cent to be completed.

During the month, no material was hauled from the Canal prism for the embankment for the roadbed of the relocated Panama railroad, the total amount used for this purpose remaining at 3,830,137 cubic yards. The Central Division delivered at Gatun 223,657 cubic yards of rock and earth, for use in the construction of the Dam, making the total for this purpose at the end of June, 3,789,118 cubic yards.

The daily average number of laborers at work on the whole division during the month was 6,777, and the daily average number of gold employes, 776.

Pacific Division.

DISTRICT NO. 1—LOCKS AND DAMS.

Excavation—The total excavation during the month amounted to 120,943 cubic yards.

Filling and Embankment—During June, no additional dry filling was added to the prism of the west dam at Pedro Miguel, the total amount of material in place at the close of the month remaining at 260,852 cubic yards, as previously reported. The back fill at Pedro Miguel was increased by 18,871 cubic yards, the total in place at the end of the month amounting to 283,325 cubic yards.

At Miraflores, 28,315 cubic yards were added to the dry fill in the toes, and 53,858 cubic yards to the hydraulic fill in the core of the west dam, making the totals at the end of the month 816,499 cubic yards, and 582,732 cubic yards, respectively. The back fill was increased by 16,155 cubic yards, the total aggregating 174,601 cubic yards at the end of the month.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT PEDRO MIGUEL.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)...	8.00	8.00
Average number of hours per day, worked laying concrete and large stone (actual working time)...	5.26	5.98
Average number of mixers per day...	....	3.81
	Cu. Yds.	Cu. Yds.
Average hourly output per mixer (actual working time)...	....	37.16
Average amount of concrete and large stone laid per hour, per chamber crane (actual working time)...	55.65	....
Large stone laid...	23.00	190.00
Concrete laid...	7,583.00	10,447.00
Total concrete laid...	7,606.00	10,637.00

Permanent plant consisted of two chamber cranes, placing.

Auxiliary plant consisted of three 2-cubic yard, and two ½-cubic yard mixers; and a daily average of 2.88 locomotive cranes and derricks, placing.

PEDRO MIGUEL LOCKS.

The back filling of the west wall was continued, and pile trestle was driven preliminary to the beginning of construction work on the west dam. Work on the drainage cut beneath the tracks at the south end of the guide wall for carrying the drainage discharge from the Culebra Cut through the center wall culvert of the Pedro Miguel locks was practically completed. During the month, the amount of iron placed aggregated 195,751 pounds.

Concrete Work—The total amount of concrete and large stone laid at Pedro Miguel was 18,243 cubic yards, as compared with 19,135 cubic yards during May. The concrete was placed, as follows: 6,554 cubic yards in the east wall; 5,486 cubic yards in the west wall; 3,508 cubic yards in the center wall; 2,056 cubic yards in the floors; and 639 cubic yards in the southwest wing wall.

MIRAFLORES LOCKS.

The McClintic-Marshall Construction Company completed the erection of chamber crane No. 2. The company also erected the cantilever arm of berm crane "G," and installed the south mixer on the latter crane. The erection of chamber crane No. 4 was started in the upper end of the east lock chamber on June 26. Dry excavation in the lower lock was continued, as was also the work of filling in the east and west toes of the west dam. Back filling was continued behind the east lock wall. The fills for, and approach tracks to, the auxiliary mixing plant in the east side wall were about completed, and the bins and trestles for the auxiliary mixing plant were erected. During the month, the amount of iron placed aggregated 566,187 pounds.

Concrete Work—The total amount of concrete and large stone laid was 26,536 cubic yards, as compared with 36,154 cubic yards during May. The concrete was placed, as follows: 7,823 cubic yards in the east wall; 469 cubic yards in the center wall; 18,056 cubic yards in the west wall; and 188 cubic yards in the floors.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT MIRAFLORES.

	Permanent Plant.	Auxiliary Plant.
Length of working day (bours)..	8.00	8.00
Average number of hours per day worked laying concrete and large stone (actual working time)...	5.61	6.06
Average number of mixers per day...	4.00	3.19
	Cu. Yds.	Cu. Yds
Average hourly output per mixer (actual working time)...	42.52	11.31
Average amount of concrete and large stone laid per hour per berm or chamber crane (actual working time)...	71.68	....
Large stone laid...	....	....
Concrete laid...	20,909.00	5,627.00
Total concrete laid...	20,909.00	5,627.00

Permanent plant consisted of two berm cranes, mixing and placing.

Auxiliary plant consisted of four ½-cubic yard mixers, and a daily average of .92 locomotive cranes and derricks, placing.

DISTRICT NO. 2—DREDGING.

The following is a statement of the output of the five dredges, which were in operation during the month, and of the amount of material excavated hydraulically:

DREDGE	Type.	WORK.		PLANT.		Total.	Remarks.
		Earth.	Rock.	Earth.	Rock.		
		Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	
Cardenas...	Dipper....	71,494	....	....	....	71,494	Place measurement
Marmot...	Ladder....	105,276	....	....	....	105,276	Place measurement
Mole...	Ladder....	26,850	3,050	....	....	29,900	Place measurement
Badger...	Ladder....	94,786	....	....	....	94,786	Place measurement
Culebra...	Suction....	220,786	....	20,959	....	241,745	Scow measurement
Total...	....	519,192	3,050	20,959	....	543,201	
Hydraulic excavation...	....	*53,858	....	....	....	53,858	Place measurement
Grand Total...	....	573,050	3,050	20,959	....	597,059	

*Excavated from Canal prism, south of Miraflores lock site.

CHAMÉ SAND EXCAVATION.

Approximately 40,300 cubic yards of sand were excavated at Punta Chamé and delivered at Balboa.

DISTRICT NO. 3—MUNICIPAL AND SANITARY ENGINEERING.

The reservoirs, water mains, sewers, roads, and oil pipe lines were maintained and extended, as required, to facilitate construction work. Work was continued on the municipal improvements in the city of Panama.

DISTRICT NO. 4—ANCON QUARRY.

PERFORMANCE OF ROCK CRUSHER PLANT.

	Hours.
Length of working day	8 00
Average number of hours per day (actual working time)	6.85
	C. Y.
Average amount crushed per hour of working day	269.22
Average amount crushed per working hour	353.54
Total output for the month	62,997.00

Relocation of Panama Railroad.

During the month, 394,665 cubic yards of material were excavated, increasing the total excavation at the close of the month to 7,496,807 cubic yards, and 450,111 cubic yards of material were placed in embankment, increasing the total for this purpose to 13,196,386 cubic yards.

The average daily number of steam shovels at work was 9.71, and the total number of working days was 26.

For comparison with the work done by steam shovels during the preceding month, and during the corresponding month of the previous year, the following table has been prepared:

Period.	Excavated by shovels.	Classification of material.		Av. No. of shovels at work.	W'kg days.	Av. yards per shovel day.
		Rock.	Earth.			
1910:	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*			
June...	236,689	83,065	153,623	8.00	26	1,138
1911:						
May....	387,427	242,885	144,542	9.54	26	1,562
June...	370,440	254,910	115,530	9.71	26	1,467

During the month, 1,035 feet of temporary trestle were driven, and work on bridges and culverts was continued. Twelve thousand and seventy-six linear feet of 70-pound track were relaid by 90-pound track, the total of 70-pound and 90-pound track at the end of the month being 136,296 linear feet, and 40,445 linear feet, respectively. The force averaged 2,073 men, in addition to those employed by contractors.

Quartermaster's Department.

LABOR.

The demand for skilled labor still exists, nearly all departments and divisions requiring men. An effort was made to secure one thousand laborers from Barbados, but further recruiting in the island has been prohibited by the Government. About 50 men have been recruited in other islands. It is believed there is an ample supply of colored labor on the Isthmus, but there is a large floating population who live from hand to mouth, and work only when driven by necessity.

BUILDINGS.

During the month, work was continued on the construction of the Salvation Army building at Cristobal, and work was commenced on foundations and walls for the new concrete block fire station at Cristobal, which is to be a permanent building. Most of the traveling gangs were utilized during the month in the removal and reerection of buildings at Culebra.

MATERIAL AND SUPPLIES.

Supplies during the month were delivered by 27 steamers, the total weight of cargo aggregating 32,904 tons, exclusive of 23,616 feet board measure, yellow pine lumber, and 49,233 feet, board measure, white oak lumber. The total value of material received during the month was $644,510.42.

Subsistence Department.

The operation of the European laborers' messes, the colored laborers' kitchens, and the line hotels showed a net profit of $1,941.07. The operation of the Hotel Tivoli showed a net profit of $1,119.15, and there was a net profit on restaurants, penitentiary, tugs, and dredges, of $64.33. The net profit on subsistence operations was $3,124.55.

Department of Civil Administration.

COURTS.

During the month, 7 civil and 25 criminal cases were disposed of in the Circuit Courts, and 71 civil and 480 criminal cases in the District Courts.

DIVISION OF POSTS, CUSTOMS, AND REVENUES.

Money order sales for June amounted to $438,038.47, and the fees to $1,956.58. Receipts from stamps and card sales, and newspaper postage, aggregated $6,657.30. The total collection of revenues made by the division was $76,002.37, and the collection on account of court fines, costs, and fees, $2,333.20.

Twenty-two vessels entered at, and 28 vessels cleared, from the port of Ancon; and 20 vessels entered at, and 20 vessels cleared, from the port of Cristobal.

DIVISION OF POLICE AND PRISONS.

The total number of persons arrested was 472, of whom 431 were men and 41 women. Forty-three nationalities were represented. The total number of arrests for the month was an increase of three, as compared with May. Nine convicts were committed to the penitentiary, and 6 were discharged, leaving 148 in confinement at the close of the month. The cost of guarding and subsisting the convicts was $2,550.92, and the value of their work on Canal Zone roads was $2,312.40.

DIVISION OF FIRE PROTECTION.

Seven fires were reported in the Canal Zone during the month, as compared with 10 in May. The damage to Commission property was $1, and to private property $136.25.

DIVISION OF PUBLIC WORKS.

In the city of Panama, the average daily consumption of water was 1,356,560 gallons, and in Colon 985,659 gallons.

The usual inspection and maintenance work of this division was performed during the month.

DIVISION OF SCHOOLS.

The total enrollment in the white schools during the month was 1,138, and the average daily attendance 751, or 66 per cent of the enrollment; and in the colored schools, the total enrollment was 1,493, and the average daily attendance 394.9, or 26 per cent. Forty-three white and 24 colored teachers were employed in the division on June 30. A class of two pupils graduated from the Gatun high school, this being the first class to complete the full four-year course of study. On June 30, the schools were closed for the summer vacation.

Department of Sanitation.

The total number of deaths from all causes among employes was 51. These were divided, as follows: From disease, 38, and from violence, 13, giving the annual average per thousand of 9.40 and 3.21, respectively.

The annual average death rate per thousand among employes for the month of June in previous years since American occupation was, as follows:

1904	5.02
1905	16.44
1906	41.55
1907	27.53
1908	12.35
1909	9.34
1910	10.66

The annual average death rate per thousand in the cities of Panama, Colon, and the Canal Zone, including both employes and non-employes, was 25.33.

The annual average death rate per thousand for the month of June among the same class of population for previous years was, as follows:

1905	50.57
1906	51.89
1907	33.45
1908	29.17
1909	16.42
1910	20.38

Segregating the whites from the blacks, the annual average death rate per thousand from disease among employes was: For whites, 11.19; blacks, 8.82, giving a general average of 9.40. For the same month during 1909, the annual average death rate per thousand from disease was: Whites, 6.29; blacks, 7.32, giving a general average of 7.07; and for the same month during 1910: Whites, 3.60; blacks, 10.93, giving a general average of 9.04.

Among employes during the month, deaths from the principal diseases were, as follows: Nephritis, acute and chronic, 6; haemoglobinuric fever, 2; malaria fever, 7; organic disease of the heart, 3; pneumonia, lobar, 9; tuberculosis, 3, and typhoid fever, 2, leaving a balance of 6 deaths from all other diseases, and 13 deaths from external violence.

Twenty-nine cases of diptheria were reported during the month, five from the Canal Zone, 23 from Panama, and one from Colon, with no deaths. So far, the type of disease is mild and yields readily to treatment.

No cases of yellow fever, smallpox, or plague were brought to, or originated on the Isthmus, during the month.

Respectfully,
GEO. W. GOETHALS, *Chairman.*

Panama Railroad Officers.

At the annual meeting of the stockholders of the Panama Railroad Company, held in New York on April 3, sixty-nine thousand nine hundred and ninety-three shares of the capital stock being represented in person, and the remaining seven by proxy, the board of directors for the ensuing year was elected, and, at a meeting of the directors, held immediately after, the following officers were chosen: President, Geo. W. Goethals; vice-president, E. A. Drake; second vice-president, H. F. Hodges; secretary, T. H. Rossbottom; treasurer, Sylvester Deming. Richard Reid Rogers was reappointed general counsel. The officers named, and E. C. Boggs, C. A. Devol, M. T. Endicott, O. H. Ernst, C. R. Edwards, D. DuB. Gaillard, H. H. Rousseau, W. L. Sibert, and E. T. Wilson, form the board of directors.

All the stock is held by the Government, except the directors' qualification shares, which are held, one by each director, at the disposition of the Government.

OFFICIAL CIRCULARS.

European Firemen

CULEBRA, C. Z., July 13, 1911.

CIRCULAR No. 229-S:

The maximum entrance rate of pay of $45 a month for Europeans used as firemen on standard gage locomotives is hereby authorized.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Assistant Foremen.

CULEBRA, C. Z., July 12, 1911.

CIRCULAR No. 299-M:

The designation of assistant foreman at the rates of pay of $140, $145, $150, $160, $165, and $175 a month is hereby authorized in addition to those published in circular No. 299. The designation of assistant foreman at the above rates of pay is applicable only to men employed in shops in a supervisory capacity.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Sales of Canal Property.

CULEBRA, C. Z., July 17, 1911.

CIRCULAR No. 399:

No sale of Isthmian Canal Commission property or material will hereafter be made, unless same is approved by the Chairman.

GEO. W. GOETHALS, *Chairman.*

Leasing of Government Building.

ANCON, C. Z., July 13, 1911.

Bids will be received by the Collector of Revenues up to and including August 10, 1911, for the leasing to the highest bidder, from August 16, 1911, for a period of not more than three years, of building No. 17 at Empire, owned by the Canal Zone Government. Rent to be payable monthly. The building is of French construction, two stories, and contains, in all, fifteen rooms, with a small outhouse. Bids should be in an envelope marked, "Bids for a lease to building No. 17 at Empire."

TOM M. COOKE, *Collector of Revenues.*

Sale of House at Public Auction.

CULEBRA, C. Z., July 13, 1911.

There will be sold at public auction, by the district quartermaster at Empire, C. Z., on the premises, at 3 p. m., Monday, July 24, to the highest bidder for cash, the following Isthmian Canal Commission property: Old French house No. 25 at Empire.

The building to be removed from the premises by the successful bidder, within fifteen (15) days from date of sale.

The Government reserves the right to accept or reject any or all bids.

For further information apply to the district quartermaster, Empire, C. Z.

C. A. DEVOL, *Chief Quartermaster.*

Bids for Baggage and Advertising Privileges.

PANAMA RAILROAD COMPANY,
OFFICE OF GENERAL SUPERINTENDENT,
COLON, R. P., July 13, 1911.

Bids will be received up to and including July 25, by the undersigned, covering the privilege of soliciting and checking baggage for transfer on trains and docks of the Panama railroad, and the use of office space in baggage room at Colon and Panama passenger stations, for a period of five years.

The successful bidder will be required to furnish a bond of two thousand dollars to ensure faithful performance on contract, copy of which can be seen on application to this office.

Bids will also be received covering the privilege of advertising at stations of the Panama railroad in conformity with contract, which can be seen at this office.

Privilege to accept or reject any or all bids is reserved.

All bids to be plainly marked "Baggage and advertising," and addressed to

J. A. SMITH, *General Superintendent.*

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal, Colon, and Balboa, during the week ending July 15:

Nordkap, July 9, from New York, with 27,655 barrels cement for Atlantic and Pacific Divisions.

Prinz August Wilhelm, July 10, from New York, with 50 cases paint, for stock.

Santa Marta, July 13, from New York, with 100 drums carbide, 50 bundles wire, 500 packages garbage cans, for stock.

Abangarez, July 13, from New Orleans, with 74 pieces oak lumber, 7,422 pieces pine lumber, for stock; 10 pieces castings for Atlantic Division.

Hanseat, July 13, from Brunswick, Ga., with 44,000 cross-ties for stock.

Colon, July 13, from New York, with 43 cases incandescent lamps, 100 pieces car wheels, 7 barrels coupler parts for Mechanical Division; 7 cases castings, 400 bundles castings, 40 cases lye, 50 kegs wire nails, 31 cases life preservers, 8 bales twine, for stock; 16 pieces steel bars, 4 pieces dredge buckets, for Pacific Division; 19 pieces castings, 27 pieces iron castings, for Atlantic Division; 12 pieces car springs for Panama Railroad Company; and a miscellaneous cargo, the whole consisting of 813 packages, weighing 162 tons.

Kansas City, July 15, from San Francisco, with 761 pieces pine lumber for stock.

Family Quarters.

Applications for married quarters on file July 1 were, as follows:

PLACE.	List No. 1.*	List No. 2.
Ancon	....	39 (2)
Ancon Hospital	1	6
Balboa	2	33 (8)
Bas Obispo	....	19 (3)
Corozal	....	42 (3)
Cristobal	3	104
Culebra	....	16 (1)
Empire	1	58 (20)
Gatun	3	122 (48)
Gorgona	....	96 (24)
Las Cascadas	....	17 (6)
Pedro Miguel-Paraiso	....	54 (10)
Porto Bello	1	12 (3)
Tabernilla	....	8 (1)
Toro Point	....	7
Total	11	633(129)

*Persons employed prior to January 1, 1908.

NOTE—Figures in parentheses represent occupants of nonhousekeeping quarters.

Rainfall from July 1 to July 15, 1911, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	1.48	3	2.69
Balboa	3.33	3	4.51
*Miraflores	1.70	6	4.29
Pedro Miguel	1.50	6	3.41
Rio Grande	1.45	6	3.92
Central Section—			
Culebra	1.29	6	3.31
*Camacho	1.11	6	3.74
Empire	77	6	2.31
Gamboa	1.95	8	6.08
*Juan Mina	2.40	6	6.90
Alhajuela	3.92	5	8.24
*El Vigia	4.20	5	6.97
*Gorgona	1.64	8	5.27
San Pablo	1.68	6	4.04
Tabernilla	1.01	6	3.45
Bohio	2.28	5	6.50
*Monte Lirio	2.93	5	9.18
Atlantic Section—			
Gatun	1.60	5	5.27
*Brazos Brook	3.97	5	12.12
Cristobal	3.88	5	13.32
Porto Bello	3.24	2	†9.59

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

†To 5 p. m., July 14.

Commissary Price List Unchanged.

There are no changes in the prices of the cold storage supplies, as printed in THE CANAL RECORD of July 12, 1911.

The following vessels arrived at or departed from the port of Balboa during the week ending July 15:

Arrivals—July 10, *Quilpue*, from Valparaiso; July 12, *Peru*, from Guayaquil; July 13, *San José*, from San Francisco; *Kansas City*, from San Francisco.

Departures—July 9, *Manavi*, to Buenaventura; July 10, *Ucayali*, to Callao; *Chile*, to Guayaquil; July 11, *Barracouta*, to San Francisco; July 12, *Ecuador*, to Guayaquil; July 13, *Mackinaw*, to San Francisco; *Peru*, to San Francisco; July 14, *Newport*, to San Francisco; July 15, *Aysen*, to Valparaiso.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending July 26, 1911, (75th meridian time):

DATE.	High.	Low.	High.	Low.	High.
	A.M.	A.M.	A.M.	P.M.	P.M.
July 20	......	3.42	9.48	4.23	10.20
July 21	......	4.42	10.50	5.26	11.28
July 22	......	5.48	11.54	6.30	......
			P.M.		
July 23	12.38	6.58	1.02	7.33	......
July 24	1.46	8.02	2.04	8.32	......
July 25	2.46	9.01	3.05	9.27	......
July 26	3.42	9.55	3.58	10.18	......

Married.

SMITH-McCUNE—At the home of the bride's parents, Judge and Mrs. J. R. S. McCune, Bowling Green, Mo., on June 10, 1911, Jean McCune to Homer K. Smith, the Rev. J. W. Pinkerton officiating. Canal Zone residence, Corozal.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Gorgona, C. Z., on Sunday, July 23, at 6 p. m. The program follows:

1. March—*The Conciliator* .... Scouton
2. Selection—*The Girl of My Dreams* .... Hoschna
3. Waltz—*Gaite* .... Waldteufel
4. Idyl—*Garden of Roses* .... Pratt
5. Overture—*Norma* .... Bellini
6. Request Number—*Sextet from Lucia* .... Donizetti
7. Characteristic—*Muttering Fritz* .... Losey
8. Selection—*Nautical Fantasia* .... Tobani
9. Popular Number—*On, Wisconsin* .... Purdy

OLIVER KIMBALL, *Acting Musical Director.*

The next concert will be given at Gatun on Sunday, July 30.

LOST—A pearl stickpin in Cristobal or Colon on Monday, the 17th inst., Finder please communicate with D. W. M., care of cold storage office, Cristobal.

Tug Service to Porto Bello, Nombre de Dios, and Toro Point.

Effective June 26, the following schedule will be maintained between Dock 13, Cristobal, Nombre de Dios, Porto Bello, and Toro Point:

Tug *Reliance* will leave Dock 13 daily, except Sundays, at 7 a. m., with two barges for Nombre de Dios, returning at once with two barges to Gatun.

Tug *Mariner* will leave Dock 13 daily, except Sundays, at 9 a. m., with three barges for Porto Bello, returning to Gatun as soon as barges are loaded.

Tug *Porto Bello* will leave Dock 13 Saturdays at 9 a. m., light, for Porto Bello. This tug will leave Porto Bello, light, at 2 p. m., arriving at Dock 4, Colon, in time for passengers to catch train No. 7, leaving Colon at 4.35

Tug *Porto Bello* will leave Dock 13 Sundays at 7 p. m., for Porto Bello, returning at once.

Tug *Mariner* will leave Dock 13 daily, except Sundays, at 6.30 a. m., for Toro Point, returning at once.

Tug *Mariner* will leave Dock 13 Sundays at 9.30 a. m., for Toro Point, returning at once.

A tug will leave Dock 13 on Wednesdays, Saturdays, and Sundays, at 4.30 p. m., for Toro Point, returning at 5.30 p. m.

A tug will leave Dock 13 on the 20th of each month at 6 a. m., for Porto Bello and Nombre de Dios, returning to arrive at Dock 4, Colon, about 4 30 p. m.

CLASSIFIED EXPENDITURES.

A statement of classified expenditures of the Isthmian Canal Commission to May 31, 1911, follows:

	Department of Civil Administration.	Department of Sanitation.	Department of Construction and Engineering	General Items.	Total.
Total to June 30, 1909	3,427,090.29	9,673,539.28	69,622,561.42	78,022,606.10	160,745,797.09
Total, Fiscal Year, 1910	709,351.37	1,803,040.95	26,300,167.05	2,863,088.83	31,675,648.20
July, 1910	58,474.88	156,006.64	2,216,849.78	280,015.85	2,711,347.15
August, 1910	63,887.05	164,220.65	2,348,777.07	336,961.35	2,913,846.12
September, 1910	60,586.46	153,433.27	2,516,814 41	236,170.76	2,967,004.90
October, 1910	37,250.26	146,587.47	2,565,042.28	295,537.33	3,044,417.34
November, 1910	71,981.80	137,912.89	2,356,292.01	233,587.25	2,799,773.95
December, 1910	69,424.73	144,754.71	2,480,221.44	179,047.95	2,873,448.83
January, 1911	71,426.87	137,665.14	2,202,370.20	235,678.30	2,647,140.51
February, 1911	69,886.61	127,198.56	2,172,805.21	173,109.54	2,542,999.92
March, 1911	74,670.20	130,694.38	2,641,274.42	460 607.91	3,307,246.91
April, 1911	74,198.25	126,588.34	2,129,806.54	115,705.55	2,446,298.68
May, 1911	71,266.08	134,786.71	1,875,080.72	200,748.85	2,281,882.36
Total	4,859,494.85	13,036,428.99	121,428,062.55	83,632,865.57	222,956,851.96

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

CORRESPONDENCE CHESS TOURNAMENT.

Provided enough players are willing to enter, a chess tournament by correspondence will be started, open to all players on the Isthmus.

Each player will play two games for the first round; half of the players being eliminated after each round, until the last two players play for the championship of the Isthmus.

Three or four moves each week can easily be played with an expense of a few cents for post cards. There will be no entrance fee.

Entries close July 22, 1911, after which the players will be paired by lot for the first round. To avoid having games finished hastily over the board, players living in different places will, as far as possible, be paired together, and the lots will be redrawn, if necessary, to attain this arrangement. All players will then be advised of their opponents, and the tournament started.

The officers who will take charge of conducting the tournament will consist of a president, secretary, and a referee, and will be elected by letter ballot from among the players entering the tournament.

All chess players are cordially invited to enter this Isthmian tournament. Those desiring to do so will please hand their names to the secretary of the local Y. M. C. A., who will forward them to the Culebra Y. M. C. A., where this proposal originated.

MOTION PICTURE SCHEDULE.

Following is the schedule of motion picture entertainments at the various clubhouses for the week beginning July 24: Monday, Gatun; Tuesday, Gorgona; Wednesday, Empire; Thursday, Culebra; Friday, Cristobal; Saturday, Corozal.

COROZAL.

The basketball team is practicing for a game with Culebra on July 29.

A number of the men have planned the organization of a discussion club, which is to be formally organized Thursday evening, July 20.

CULEBRA.

The duckpin high scores for last week are, as follows: Huttlemaier, 100, 105, 102, 119, 108; Case, 102, 100, 101, 108; Silver, 102; Mengel, 104; Seylander, 100, 100; Driscoll, 113; Fox, 112.

The Culebra hotel and Administration building basketball teams played their second game last week, the hotel winning by a score of 68 to 26. Each team has won a game, and the deciding contest will be played this week.

On Saturday night, July 22, at 8.15, the Culebra and Empire basketball teams will play their initial game on the Culebra floor. Men desiring a "tryout" on the Culebra team should make their wants known at once.

Between the last two films of the motion picture show last week, Mr. Warner and Mr. Hostetter, in view of Mr. Putnam's leave taking, spoke to the Culebra members of his satisfactory services while at Culebra, and of the keen appreciation on the part of the members. Mr. Putnam, in a few words, thanked the people for their hearty cooperation and loyalty, and commended their spirit of good fellowship.

EMPIRE.

Fifty-one men entered in the tenpin handicap tournament that began Saturday evening, July 15. There will be prizes for the highest number of games won, for highest average, and highest individual score. The standing of the contestants up to Monday was, as follows:

	Won.	Lost.	P.C.
Gustavson	2	0	1000
Walling	1	1	500
Parkis	1	2	333
Hobbs	0	1	000

A new moving picture machine was used for the first time on July 12, and proved satisfactory. Piano selections were given during the evening, and W. G. Ross sang a selection from the "Pink Lady."

Miss Sloan of Cincinnati entertained some of the members and their friends with a recital of soprano songs on Saturday evening, July 15.

Twenty boys are entered in the boys' handicap duckpin tournament. At the present time, Witt, Vivian, and Benninger have not lost a game.

The following high scores were rolled during the week: Tenpins—Hobbs, 208, 200; Potter, 231; Sawtelle, 200; duckpins—Pinney, 102, 109; Grund, 109; Dakin, 116, 100; Pearce, 118; Johnson, 105; Danielson, 102; Garrett, 104; Pulsifer, 112, 104; Rodeghiero, 103, 115.

GORGONA.

The song service on Sunday night was led by S. C. Murray, with E. M. Reinholt playing the piano.

Gymnasium work will start July 27, and from present prospects, the class will be well attended. As a preliminary to the gymnasium class, volley ball was played in the gymnasium on Monday evening, July 17.

Wednesday night of each week has been set aside for basketball practice. However, no teams will be formed for some time to come. All men interested in the game are invited to come up for practice.

The local pool tournament was started on July 17. A medal will be given to the winner of the regular tournament, and a pool cue in the beginners' tournament.

GATUN.

The tentative line-up of the Gatun debaters for the Cristobal-Gatun debate on "Government ownership of railroads" are: Affirmative—Barte, Fox, and Windes; negative—Wood, Purdy, and Shailer.

Basketball practice was held on Tuesday and Friday nights.

A class in wrestling was started on Monday night.

The Gatun Chess and Checker Club has been organized, with the following officers: President, R. E. Chatfield; vice-president, F. D. Gartrell; secretary, W. H. Brown. Among those who have signed up are: McLean, Grier, Feige, Severy, Frederickson, MacQueen, Guarino, Brown, Horle, Dickson, Chatfield, Gartrell, Johnson, Lincoln, Barte, Kuehnle, Harrold, MacCombs, Clark, and Carter.

PORTO BELLO.

The handicap tournament recently held by the chess club resulted, as follows:

Name.	Played.	Won.	Lost	P.C.
Capt. Stickle	4	4	0	1.000
Morgan, C. D.	9	7½	1½	.833
Corrigan	13	9	4	.692
Hanbury	11	7	4	.636
Colberg	5	3	2	.600
Tuttle	5	3	2	.600
Mackintosh	12	7	5	.583
Cornelison	12	6	6	.500
McDevitt	12	5½	6½	.458
Goodfellow	10	4½	5½	.450
Wright	9	3½	5½	.389
Nemic	10	3	7	.300
Hill	5	1	4	.200
Rogers	11	2	9	.182
Arden	3	0	3	.000

Handicaps were based on the result of the May tournament, and ranged from one move to queen and one pawn. It was required that fifty per cent of the games be played for a player to be eligible for a prize. The winners were, as follows: First prize, C. D. Morgan second prize, P. F. Corrigan

CRISTOBAL.

The high bowling scores were, as follows: Duckpins—Hess, 102, 101, 101, 128, 101; Wheeler, 105, 100; Wood, 101; Barrett, 118, 108; Smith, 113, 120; Furlong, 101, Ashton, S., 108; Gibson, 100. Tenpins—Gibson, 211; Furlong, 201; Grover, 202; Bullard, 223; Blackburn, 220; Wallace, 201; O'Shea, 213.

On Saturday night, July 22, there will be an elimination tenpin bowling contest. This is open to every one, and no entrance fee will be charged. The winner will be given free bowling for the following week.

Misdirected Letters

ANCON, C. Z., July 19, 1911.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received in the office of the Director of Posts, and may be secured upon request of addressee:

Anderson, Mrs. Daniel
Aughinbaugh, Mrs. Ella
Bernell, Wm. F.
Bewley, Samuel
Boogs, C. B.
Brown, Mrs. Rosetta
Conklin, Mrs. W. D.
Demeis, Tomasso
Demuth, Mrs. Ed.
Dickinson, Mrs. Annie
Epsey, L.
Golden, J. P.
Graham, Miss Sophia
Landis, Hon. J. F. R.
Lewis, Miss Rena
Lombard, Thos.
Margali, J.
McCormick, John J.
McLaughlin, Jr., Patrick
Meyers, Mrs. Walter J.
Petit, John
Powell, Chas. W.
Small, John N.
Smith, Chas. L.
Spicer, Mrs. George
Townsend, L. A.
Wieshofer, Capt. John
Withrow, R. E.
Woodward, A. G.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, July 15, 1911. All heights are in feet above mean sea level.

Day and Date.	Station.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun., July 9	129.2	95.4	50.9	20.4	19.3
Mon., July 10	128.9	94.8	47.8	19.4	19.0
Tues., July 11	135.3	99.0	51.5	19.5	18.6
Wed., July 12	128.0	94.2	47.5	19.1	18.4
Thurs., July 13	127.5	93.8	47.0	18.2	18.0
Fri., July 14	127.2	93.5	46.4	17.8	17.5
Sat., July 15	127.0	93.3	46.2	17.1	17.0
Height of low water	125.0	92.0	44.0		

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to changes.

NEW YORK TO CRISTOBAL.

Allianca	P. R. R.	Thursday	July 13
Panama	P. R. R.	Wednesday	July 19
Advance	P. R. R.	Tuesday	July 25
Colon	P. R. R.	Monday	July 31
Allianca	P. R. R.	Saturday	Aug. 5
Panama	P. R. R.	Saturday	Aug. 12
Advance	P. R. R.	Friday	Aug. 18
Colon	P. R. R.	Thursday	Aug. 24
Allianca	P. R. R.	Wednesday	Aug. 30
Panama	P. R. R.	Tuesday	Sept. 5
Advance	P. R. R.	Monday	Sept. 11
Colon	P. R. R.	Monday	Sept. 18
Allianca	P. R. R.	Saturday	Sept. 23
Panama	P. R. R.	Friday	Sept. 29

CRISTOBAL TO NEW YORK.

Colon	P. R. R.	Wednesday	July 19
Allianca	P. R. R.	Tuesday	July 25
Panama	P. R. R.	Monday	July 31
Advance	P. R. R.	Sunday	Aug. 6
Colon	P. R. R.	Saturday	Aug. 12
Allianca	P. R. R.	Friday	Aug. 18
Panama	P. R. R.	Thursday	Aug. 24
Advance	P. R. R.	Wednesday	Aug. 30
Colon	P. R. R.	Tuesday	Sept. 5
Allianca	P. R. R.	Monday	Sept. 11
Panama	P. R. R.	Sunday	Sept. 17
Advance	P. R. R.	Saturday	Sept. 23
Colon	P. R. R.	Saturday	Sept. 30

NEW YORK TO COLON.

Metapan	U. F. C.	Thursday	July 13
Prinz Joachim	H.-A.	Saturday	July 15
Zacapa	U. F. C.	Thursday	July 20
Prinz Eitel Friedrich	H.-A.	Friday	July 21
Atrato	R. M.	Saturday	July 22
Almirante	U. F. C.	Thursday	July 27
Prinz Aug. Wilhelm	H.-A.	Saturday	July 29
Santa Marta	U. F. C.	Thursday	Aug. 3
Prinz Sigismund	H.-A.	Friday	Aug. 4
Thames	R. M.	Saturday	Aug. 5
Metapan	U.F. C.	Thursday	Aug. 10
Prinz Joachim	H.-A.	Saturday	Aug. 12
Zacapa	U. F. C.	Thursday	Aug. 17
Prinz Eitel Friedrich	H.-A	Friday	Aug. 18

COLON TO NEW YORK.

Santa Marta	U. F. C.	Thursday	July 20
Prinz Sigismund	H.-A.	Saturday	July 22
Thames	R. M.	Tuesday	July 25
Metapan	U. F. C.	Thursday	July 27
Prinz Joachim	H.-A.	Tuesday	Aug. 1
Zacapa	U. F. C.	Thursday	Aug. 3
Prinz Eitel Friedrich	H.-A.	Saturday	Aug. 5
Almirante	U. F. C.	Thursday	Aug. 10
Prinz Aug. Wilhelm	H.-A.	Tuesday	Aug. 15
Santa Marta	U. F. C.	Thursday	Aug. 17
Prinz Sigismund	H.-A.	Saturday	Aug. 19

NEW ORLEANS TO COLON.

Atenas	U. F. C.	Saturday	July 15
Turrialba	U. F. C.	Saturday	July 22
Abangarez	U. F. C.	Saturday	July 29
Atenas	U. F. C.	Saturday	Aug. 5
Turrialba	U. F. C.	Saturday	Aug. 12
Abangarez	U. F. C.	Saturday	Aug. 19

COLON TO NEW ORLEANS.

Abangarez	U. F. C.	Thursday	July 20
Atenas	U. F. C.	Thursday	July 27
Turrialba	U. F. C.	Thursday	Aug. 3
Abangarez	U. F. C.	Thursday	Aug. 10
Atenas	U. F. C.	Thursday	Aug. 17
Turrialba	U. F. C.	Thursday	Aug. 24

Hamburg-American steamers leave Colon for New York via Kingston at 10 a. m. on sailing dates. The *Prinz August Wilhelm* and *Prinz Joachim* call at Santiago de Cuba, on both outward and homeward voyages. A ship will leave Colon for Bocas del Toro at 5 p. m. on August 9; and for Port Limon at 5 m., on July 26, and August 9.

The Leyland line steamer *William Cliff* sails for New Orleans, via Port Limon, on or about July 29.

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships for New York via Kingston on Thursday at 11 a. m.; for Bocas del Toro on Monday at 6 p. m.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, JULY 26, 1911. No. 48.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Revised Estimate of Excavation.

Elsewhere in this issue, there is published an article on the slides in Culebra Cut, giving the figures of the new estimate, as of July 1, for excavation in the Central Division, made necessary because of these slides. By error, the amount of additional excavation on this account, as published in the report for June of the Chairman and Chief Engineer, in the issue of THE CANAL RECORD of July 19, was given as 2,571,690 cubic yards, instead of 4,676,278 cubic yards. That section of the report should have read:

"On account of the changes in the stability of the Canal banks in the Culebra section it was found necessary to add 4,676,278 cubic yards to the original estimate for completed Canal, making the revised total estimated amount of material to be removed in the Central Division 101.801,296 cubic yards, and up to July 1, 1911, 77,338,235 cubic yards had been removed, leaving 24,463,061 cubic yards yet to be removed, in order to complete all excavation in the Central Division. From these figures it will be seen that 75.97 per cent of all excavation in the Central Division has been completed up to the close of the month of June, and 24.03 per cent yet remained uncompleted.

"Considering the two sections which compose the Central Division. the excavation completed, and that yet to be completed, at the close of June operations were, as follows:

CULEBRA SECTION.	*Cu. Yds.*
Completed	65,514,865
To be completed	23,929,140
CHAGRES SECTION.	*Cu. Yds.*
Completed	11,823,370
To be completed	533,921

"From the above figures it will be seen that the Culebra section, locally known as Culebra Cut, is 73.25 per cent completed, and 26.75 per cent yet to be completed. The Chagres section is 95.68 per cent completed, and 4.32 per cent yet to be completed."

Concrete Revetting in Culebra Cut.

Four tests are being made at Contractor's Hill, in Culebra Cut, to determine the most economical and effective method of concrete revetment. The first method is to place rail against the side of the soft rock on 3-foot centers, covering a space about 20 feet broad, and then cover the rail with concrete. The second method is to place one inch square rods, 2 feet 6 inches long, in the soft rock on 3-foot centers, and to anchor the revetment of concrete to the rock by these rods. The third, is to place the concrete against the rock in forms, but without puddling it to make a smooth surface, and then to finish the surface with the cement gun, this method to use neither reinforcement nor anchorages. The fourth method is to continue with the work of coating the soft rock by means of the cement gun.

The purpose is to determine the kind of protection to use in covering the decomposing rock below the 95-foot level in Contractor's Hill, and at other points along the Canal. Chagres River gravel, which is mixed with sand in proper proportion, and one barrel of cement to the cubic yard of material, are used in making the concrete.

Coal Contract.

The annual contract for furnishing up to 550,000 tons of semibituminous coal for use by the Commission and railroad on the Isthmus has been let to the Pocahontas Fuel Company at $2.51 per gross ton, f. o. b. steamer; and the contract for carrying this coal to the Isthmus has been let to the Earn Line Steamship Company at $1.29½ per ton.

Canal Work in the Mindi Section.

The construction of the dike, east of the Panama railroad right-of-way, between New Gatun and Mindi station, for the retention of material to be excavated hydraulically from the Canal prism, north of Gatun Locks, will be completed within the next few days. It consists of a trestle fill, which parallels the Panama railroad for a distance of about 4,000 feet, with a line extending at nearly right angles from each end to higher ground. The dike forms an enclosure of the low ground in this vicinity, with an inside area of several hundred acres, and will be capable of retaining a fill about 20 feet in depth, the water from it draining off into the Mindi River. The spoil is obtained from the dry excavation below sea level at Mindi.

It is expected that the hydraulic fill of the city of Colon will be completed this week, and dredge *No. 86* which has been employed in this work, will be returned, after a thorough overhauling at the Cristobal drydock, to its former position in the borrow pit, north of the Gatun Dam, where it will resume operations on the hydraulic fill of the Dam, displacing the *Sandpiper*. The latter will be set at work north of Gatun Locks to begin the excavation toward Mindi, and also the removal of the earth dike, which forms a barrier between the upper lock and the anchorage basin. About the first of November, the *Sandpiper* will be joined by dredge *No. 4*, now engaged in dredging sand at Nombre de Dios.

Two steam shovels are at work at present in the pit at Mindi, and the excavation is down to grade in several places. The work there will probably be completed before the end of the year.

Vessels to Carry Cement.

The contract for furnishing ships to carry cement, in addition to that carried by the *Ancon* and *Cristobal*, has been let to the Munson Steamship Company for $1.84 per gross ton, as compared with $1.70 per gross ton under the former contract. Three bids were received, the other two being $1.87 and $2, respectively. The new agreement became effective July 1, and is for three or six months, at the option of the Commission.

Lubricating Oils and Greases.

The contract for lubricating oils for the fiscal year 1912 has been let to the Texas Oil Company, the amounts estimated and prices bid, less the rebate allowed for return of containers being, as follows:

CLASS OF OIL.	Quantity	Price.
	Gallons.	*Cents.*
Locomotive engine	60,000	11.00
Valve	65,000	19.50
Car	70,000	10.00
Stationary engine (dynamo)	25,000	13.00
Marine engine	30,000	27.50
Turbine engine	6,000	13.00
	Pounds.	
Nonliquid	22,000	5.00
Crank pin grease	450	5.25
Cable grease	12,000	2.75
Yellow cup grease	60,000	6.00
Black gear grease	60,000	2.75

The total estimate is 256,000 gallons of oil, and 154,450 pounds of grease, and the total contract price $45.258.63.

Work on New Balboa Docks to be Hastened.

Work on the new Panama railroad dock at Balboa is now going forward with day and night shifts, in order that its construction may be hastened The new schedule went into effect on Monday July 17, the day shift working from 7 a. m. to 5 p. m., and the night shift from 6 p. m. to 3 a. m. Owing to a lack of lighting facilities, the night work so far has been principally confined to freeing the caisson pits of water, and removing the excavated material. A lighting circuit is being strung, and within a few days, the night force will be considerably augmented, and operations extended to all phases of the work.

On July 24, twenty-seven out of the 53 caissons required for the foundation of the dock were under way. Of this number, nine had been sunk to bed rock, and six of them had been filled with concrete. Several more had been excavated to nearly the required depth, and the work is now in progress at various points for the entire length of the dock. In sinking the caissons at the north

NOTES OF PROGRESS.

(Continued.)

end, some difficulty was experienced from the unusual amount of water and the peculiar formation of the ground encountered, the latter consisting of soft mud underlying a clay of much harder quality, causing some interference with the setting of the caisson structures.

Part of the excavation for the caisson pits is done with bucket and shovel, and part by a crane operating a clam shell bucket. All of the concrete sections of the caissons, with the exception of the base portions, are built on the bank nearby, and transported into place by crane. Three mixers, two ½-yard, and one 1-3 yard, supply the concrete. In addition, two locomotive cranes, and 14 drilling machines, are in service, the latter furnishing the motive power for hauling the buckets of mud out of the pits.

Gatun Dam Spillway.

The concrete work in the Spillway of Gatun Dam is over 65 per cent completed, 146,822 cubic yards, out of a total of 225,000, having been placed at the close of work on July 22. A statement of the amount laid each working day last week, and of the total in place, follows:

Date.	Concrete Laid.	Hours worked.	No. Mixers.
July 17	236	8.00	1
July 18	204	8.15	1
July 19	220	8.00	1
July 20	204	8.00	2
July 21	236	8.00	1
July 22	180	7.00	1
Total	1,280	47.15	1.16
Previously reported	145,542		
Grand total	146,822		

Canal Legislation.

A bill has been introduced in the House of Representatives by Representative W. D. Stephens of California, providing for the purchase, charter, or construction of not less than six steamships to be run by the Panama Railroad Company in the Pacific coast trade between Seattle and Panama, this service to be extended upon the opening of the Canal to include ports between Seattle and Boston. The bill has been referred to the Committee on Appropriations.

Porto Bello Crusher.

A statement of the work done at the Porto Bello crusher, by days, for the week ending July 22, follows:

Date.	Hours worked.	Cubic Yards.
July 17	5.21	1,848
July 18	6.13	2,437
July 19	4.24	1,737
July 20	4.50	1,863
July 21	3.40	1,565
July 22	4.58	2,070
Total	29.26	11,520

Sunday Trips to Toro Point.

Beginning last week, the limit of passes issued to employes and their families who desire to spend a Sunday at Toro Point was raised from 40 to 100. Until recently, a clapet was used to carry the excursionists, and its accommodations provided for about 40 people. Under the new arrangement, the trip is made by tug, and increased passenger room is available. The demand for passes was always greater than the supply, which usually became exhausted early each week, and even the increased allowance of transportation has been followed by an increased demand, so that practically the entire allotted number of passes were issued for Sunday, July 23. Since the life protection measures were instituted, the bathing beach has proved a greater attraction.

Pilots, Masters, Mates, and Engineers.

The Board of Local Inspectors will examine applicants for licenses as pilots, masters, mates, and engineers, on Wednesday, August 2, at 9 a. m., at the Administration building, Ancon.

CONCRETE WORK IN THE LOCKS.

Over 58 per cent of the concrete for all the locks is in place, the amount at the close of the work on July 22 being 2,476,271 cubic yards, out of a total of approximately 4,284,400. A total of 32,140 cubic yards of concrete was laid in the locks during the week ending July 22.

GATUN LOCKS.

Over 70 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of the work on July 22 being 1,479,273 cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each working day for the week ending July 22, and of the total, follows; and a similar statement for the work in the Spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
July 17	1,898	31.07	8	614	8.40	2	168	2,680
July 18	1,352	21.42	6	758	9.40	2	150	2,260
July 19	2,078	32.23	6	804	9 40	2	288	3,170
July 20	2,276	37.10	6	828	9.40	2	244	3,348
July 21	2,264	39.13	7	772	8.40	2	348	3,384
July 22	1,860	31.16	7	702	9.40	2	302	2,864
*Portable Mixers				342				342
Total	11,728	192.51	6.66	4,820	56.00	12	1,500	18,048
Previously reported								1,461,225
Grand total								1,479,273

*The 342 yards shown for the portable mixers are reinforced concrete, and were placed on the following days; July 17th, 52; July 18th, 28½; July 19th, 82; July 20th, 55½; July 21st, 68; July 22d, 56.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is over 82 per cent completed, 688,843 cubic yards, out of a total of 837,400, having been placed at the close of work on July 22. The record for each of the six 8-hour working days of last week, follows:

Date.	Auxiliary Plant. 2-cubic yard mixers.			Auxiliary Plant. ½-cubic yard mixer.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
July 17	580	14.00	3	204	19.60	3		784
July 18	372	12.00	3	111	11.00	3		483
July 19	798	19.00	3	122	9.50	2		920
July 20	838	19.00	3	82	7.50	2		920
July 21	582	14.00	3	142	11.50	2		724
July 22	406	15.00	3	150	11.50	2		556
Total	3,576	93.00	3	811	70.60	2.33		4,387
Previously reported							4,415	684,456
Grand total							4,415	688,843

MIRAFLORES LOCKS.

Over 22 per cent of the concrete for the system of two twin locks at Miraflores was in place on July 22, the total amount on that date being 308,155 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant. 2-cubic yard mixers.			Auxiliary Plant. ½-cubic yard mixer.				Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
July 17	972	19.50	4	212	17.00	3	324	9.50	2		1,508
July 18	926	17.60	4	188	14.50	2	456	10.00	2		1,570
July 19	842	16.83	4	232	18.00	3	450	11 00	2		1,524
July 20	984	19.17	4	227	19.00	3	510	13.00	2		1,721
July 21	1,046	19.17	4	162	13.00	2	480	10.00	2		1,688
July 22	994	19.33	4	172	17.50	3	528	12.00	2		1,694
Total	5,764	111.60	4	1,193	99.00	2.67	2,748	65.50	2		9,705
Previously reported										3,693	298,450
Grand total										3,693	308,155

CURUNDU RIVER DIVERSION.

Manner in Which the Swampy Area Contiguous to Panama is Being Drained.

Work on the Curundú River diversion, which is designed to drain the swamp lands bounded on the north by Diablo Hill, on the east by the rising ground of the Sabanas, on the south by the track to Balboa, and on the west by the toes of the old Sosa-Corozal dam, is in progress. When the fill for the toes of the dam was first started, about four years ago, the natural outlet of the Curundú was blocked, and since then, the only place of escape for the surplus water in the swamp has been over a dike about four feet above sea level at mean tide, into the diversion ditch which crosses the old Balboa wagon road, near the East Balboa hotel. This would allow the water to run off only at overflow periods, and would keep the tidal streams and low places filled at other times. In the past, the swamp has acted as a receptacle for the streams flowing across the Panama railroad right-of-way, south of Diablo Hill, which have a watershed extending back into the Sabanas. This formed a vast breeding place for mosquitoes, and the present work is, therefore, a sanitary measure.

The west toe of the old dam has been cut through, thus allowing the water from the Curundú to flow into the Rio Grande, near the site of the half-submerged old French dredges. The excavation is being accomplished by means of an orange peel dredge, which is pushed along on skids, and by hand work. The dredge is now engaged in making a cut through the east toe of the dam, and from this point, channels will be extended in two directions, one to connect with the Rio Hondo, a small tidal stream, and the other to carry off the water from a tidal estuary, which winds tortuously about the flats, and constitutes one of the largest of the swamp waterways. About 1,500 feet of channel, in all, will have to be excavated to an average depth of four feet below mean tide. The bottom width varies from 10 to 15 feet, depending on the amount of water to be carried off. As the material for the most part is very soft, and slides easily, the banks of the channels are made to slope back. so that at the top, their width is 25 feet, or more, and, in time, the currents will probably cause a further widening.

When the system has been completed, the entire swamp will be drained of water at low tide, the work so far accomplished having lowered the old level considerably, tracts of land, formerly under water at low tide, being high and dry under the changed conditions. The work it is believed, will improve sanitary conditions in the district of Guachapali, in Panama, and will result in a sanitary saving. One instance of this, is the section of swamp occupying the triangle between the Panama railroad main line, the Balboa track, and the Balboa wye, which will be drained sufficiently to permit of cutting grass with a mowing machine, instead of scythes.

The Central Division is making a fill of the low lands near the East Balboa commissary, which will reclaim 66 acres of ground. The diversion ditch, which extends through this swamp, will also be filled, as, under the new drainage system outlined above, there will be no further use for it.

Air Compressor for Miraflores Locks.

Owing to insufficient pressure in the air line at Miraflores for the efficient operation of the drills, an air compressor, having a capacity of 1,100 cubic feet of free air per minute, has been transferred to the Pacific Division from the Panama Railroad company's shop at Cristobal, and will be installed on the west bank of the lower lock. Steam for the same will be supplied from two old French engines.

Dynamite Explosion at Ancon Quarry.

A premature explosion of dynamite occurred at Ancon quarry about 2 p. m., on Wednesday, July 19, killing four men and seriously injuring two others. The dead are: Charles Jolly, Jamaican, check No. 105255; Ernesto Roman, Panamanian, check No. 119814; Felipe Torres, Salvadorean, check No. 119822; and Felipe Martinez, Panamanian, nonemploye. The injured were: Leopold Maxwell, Jamaican, check No. 74707, and Manuel Lopez, a Spanish contract laborer, check No. 3867.

Just before the explosion, Jolly, Torres, and a third man were each carrying a 50-pound box of dynamite from the magazine to a place where a blast was to be set off. When about 300 feet distant from steam shovel No. 255, situated on one of the quarry levels, the man in advance placed his box on a pile of old ties for a moment's rest. The man second in line did likewise as he came up, and, as far as can be learned, the explosion occurred at this instant. The third man, who was 30 or 40 feet away from the place, saw the flash, threw his box of dynamite on the ground, and fled up the track. The box was broken in its fall, and its contents, although scattered about, failed to explode. Roman, employed as a water boy, was standing near by in company with Martinez, and both were killed. Maxwell and Lopez, the injured men, will probably recover. The cause of the explosion is not known.

The steamer *Cristobal* will sail from New York on July 27.

LABOR FORCE AND QUARTERS IN JUNE.

The lack of common laborers for the Canal and railroad work, noted in THE CANAL RECORD of June 14, continued throughout June. In the opinion of the Chief Quartermaster, this want is not due to an actual decrease in the number of laborers in the Canal Zone, and the contiguous parts of Panama, but to the idleness of many of the laboring class. There is also a steady increase in the number of negroes cultivating small patches of land in the Canal Zone, and giving up work on the Canal and railroad for farming in the bush.

The total force at work on the Canal and railroad on June 28 was 32,690, as compared with 34,233 on May 31. and with 35,578 in June, 1910. Canal employes numbered 26,087, and Panama railroad, 6,603. The number of "gold," or white American employes in June, 1911, was 4,292, as compared with 4,367 in June, 1910. The force report follows:

DEPARTMENT.	SILVER EMPLOYES.*														Total Gold.	Grand Total.
	Artisans.						European Laborers.		West Indian Laborers.							
	Monthly.	44 cents.	32 cents.	25 cents.	20 cents.	16 cents.	20 cents.	16 cents.	20 cents.	16 cents.	13 cents.	10 cents.	7 cents.	Total Silver.		
Const'ct'n and Eng'r'ng.	4,143	14	18	218	602	2,206	2,680	832	110	461	3,703	2,176	232	17,395	3,195	20,590
Civil Administration....	194	..	..	2	4	18	......	......	...	.....	......	10	....	228	362	590
Sanitation........	689	..	..	2	3	5	5	......	...	1	5	321	9	1,040	373	1,413
Quartermaster's.........	943	..	1	115	151	93	273	44	16	3	44	821	†6	2,510	202	2,712
Subsistence.............	608	..	..	1	1	......	......	......	...	.....	......	......	....	610	51	661
Disbursements..........	7	..	..	....	.....	......	......	......	...	.....	......	......	....	7	24	31
Examinat'n of Accounts.	5	..	..	....	.....	......	......	......	...	.....	......	......	....	5	85	90
Total................	6,589	14	19	338	761	2,322	2,958	876	126	465	3,752	3,328	247	21,795	4,292	26,087
Month previous.........	6,810	14	18	345	801	2,542	2,933	1,026	128	510	3,816	3,651	273	22,867	4,362	27,229

Panama railroad force, 3,534; Panama railroad relocation force. 2,000; Panama railroad commissary force 1,069. Total 6,603 I. C. C. force, 26 087. Grand total. 32,690.

*All wages specified are in gold. †Includes four 5-cent employes.

The employes in the Department of Construction and Engineering on June 28 were distributed, as follows:

DIVISION.	SILVER EMPLOYES.*														Total Gold.	Grand Total.
	Artisans.						European Laborers.		West Indian Laborers.							
	Monthly.	44 cents.	32 cents.	25 cents.	20 cents.	16 cents.	20 cents.	16 cents.	20 cents.	16 cents.	13 cents.	10 cents.	7 cents.	Total Silver.		
Chief Engineer	44	..	..	2	1	......	.....	......	...	....	175	......	....	222	175	397
Mechanical..............	208	6	2	21	50	399	63	8	...	.....	716	46	9	1,528	772	2,300
Atlantic........	1,834	6	14	101	293	903	738	456	...	57	885	399	48	5,734	896	6,630
Central..................	1,067	2	.	31	104	434	1,526	91	93	404	832	1,518	119	6,221	778	6,999
Pacific...................	990	..	2	63	154	470	353	277	17	...	1,095	213	56	3,690	574	4,264
Total	4,143	14	18	218	602	2,206	2,680	832	110	461	3,703	2,176	232	17,395	3,195	20,590
Month previous.........	4,356	14	17	227	642	2,412	2,688	997	110	510	3,799	2,576	252	18,600	3,280	21,880

QUARTERS.

On July 1, there were 23,438 occupants of Commission quarters. Of this number, there were 9,406 white Americans, including 5,364 men, 2,070 women, and 1,972 children. There were 5,573 Europeans, of whom 4,997 were men, 239 were women, and 337 were children. There were 8,459 negroes, of whom 5,996 were men, 1,082 were women, and 1,381 were children.

The above figures include 40 Asiatics at Balboa, and two at Porto Bello.

CRANES FOR BALBOA WHARF.

Eight Machines to be Purchased to Increase Handling Facilities at Pacific Terminus.

Award has been authorized for eight 4-ton electric cargo handling cranes for the pier at Balboa, the Pacific entrance to the Canal, to the Maine Electric Company, at $10,465.75 per crane, plus $372 per crane for special installation, plus $627.32 per crane for magnetic control; total per crane, $11,465.07; total for eight cranes, $91,720.56.

Bids were originally opened on February 1, nine being received, and award was authorized to the Cleveland Crane and Engineering Company. On account of changes made in the plans, it was urged by other bidders that new bids should be requested and this was done. The new bids were opened on June 22, and were sent to the Isthmus for canvass. There were seven, and the lowest was accepted.

The difference between high and low tide at Balboa is about 20 feet. The cranes must move along the face of the dock, and handle cargo from ships through the legs of the cranes into the covered portion of the pier, and were designed to meet these conditions. They consist of a structural steel framework and a hinged vertical swinging steel boom. They must be able to hoist a load of four tons, at a distance of 40 feet from center of crane to center of ship, through a maximum height of 90 feet, at a speed of 300 feet per minute, trolley it along the boom at a speed of 600 feet per minute, and deliver it upon the wharf within one minute from the beginning of the operation. The tower must be able to move along the dock at the rate of 100 feet per minute against a wind pressure of 30 miles an hour.

These cranes will be delivered within eight months of the time of signing the contract, and will be erected one by one, in order that the cranes which they replace may be used as much as possible during the erection. This installation is part of the effort to increase temporarily, the handling facilities at the Pacific terminus of the Panama railroad.

Fatally Burned by Alcohol Explosion.

Elizabeth Bailey, aged 25 years, a Jamaican servant in the family of Mr. L. G. Thom at Gatun, tried to light the kitchen fire with alcohol on the morning of July 22. The alcohol exploded, burning her so badly about the upper part of the body that she died at Colon Hospital a few hours later. Mr. Thom suffered burns on both hands in trying to smother the fire that was consuming the servant's clothing.

Church School and Orphanage in Colon.

A two-story concrete building for educational and charitable purposes is under construction on Panama railroad land in Colon, adjacent to the Church of the Immaculate Conception, of which the Rev. José P. Volk is the resident priest. The building is 133 feet long, 45 feet wide, and the walls, which have recently been completed to the second story, are 24 inches wide, with a base 30 inches wide, and a foundation below the surface of the ground five feet in width. The walls are made of coral rock concrete, the rock having been obtained from the excavation for the D street storm sewer. The lower floor is provided with numerous windows and doors, including a wide arched entrance on each of the two street sides. Both floors will be made of cement, and the upper one will rest on iron girders. Work on the building was begun in 1907, and has been prosecuted in gradual stages, the funds having been furnished from the Rev. Father Volk's personal resources, and, in addition, he has worked on it with his own hands. It is designed to use the building as a place for holding public meetings, as well as for a schoolroom and orphanage.

Postal Business and Canal Zone Revenues.

The report of the Director of Posts for the month of June shows that 18,228 money orders were issued, amounting to $438,054.55. Of this amount, $323,144.91 was issued payable in the United States, $114,293.14 in the Canal Zone, $388 in Martinique, and $228.50 in Costa Rica. The fees collected amounted to $1,956.70, and the amount of orders paid and repaid was $135,934.63.

Postal sales during the month amounted to $6,672.65, and newspaper postage to 65 cents.

The revenue collections for the month were, as follows:

Distillation licenses	$ 306.74
Motor vehicle licenses	52.00
Retail liquor licenses	29,000.00
Bills collected for treasurer	67.74
Total	$29,426.48

Profit From Marine Minstrel Show.

The minstrel show by the men of the U. S. M. C. at Camp Elliott, at the National Theatre in Panama, on the night of July 3, made a gross earning of $956.10, and net of $204.76. One-half of the net earnings go to the post exchange at Camp Elliott, and the other half to the Fourth of July committee.

Veterans of Foreign Service.

Canal Zone Post, No. 40, American Veterans of Foreign Service, will hold a meeting, in the District Court room, building No. 1, Cristobal, on Saturday, July 29, at 8 p. m., for the purpose of electing officers. All charter members are requested to be present.

W. D. ROGERS, *Adjutant.*

GATUN, C. Z., July 23, 1911.

Injunction Case.

The argument in the application for an injunction against the Panama Railroad Company, made by Horatio L. Stevenson, for the purpose of restraining the company from excavating in a hill east of the Mount Hope road, was heard in the Circuit Court of the Third Judicial Circuit, at Cristobal, on Monday, July 24, having been postponed from July 20. The matter was taken under advisement by Justice Brown.

Census of the Canal Zone.

The Department of Civil Administration has been directed to prepare for a thorough census of the Canal Zone. A census was taken in 1908, the period covering March 3 to June 23.

Knights of Pythias.

Paradise Company, No. 4, Uniformed Rank, Knights of Pythias, a new company, will be mustered in at Paraiso lodge hall on Saturday evening, July 29 The following officers will be installed: Captain, George D. Morton; first lieutenant, John D. Harper; second lieutenant, Harry L. Bridges; recorder sergeant, L. L. Hyer. Captain Frank L. Cornish of Gatun will be the mustering officer. All members of the Uniformed Rank are invited to attend. Other companies in the Canal Zone are, as follows: Panama Company, No. 1, at Gatun; Empire Company, No. 2, at Empire; Cascade Company, No. 3, at Las Cascadas. There are about 200 members in all. The new company has 25 members.

Employes Rates to South America.

The Pacific Steam Navigation Company, and the South American Steamship Company, have made a rate of 10 per cent off from regular fare for employes of the Commission traveling south of Panama, first-class, in parties of from six to ten persons, and a rate of 20 per cent off for parties of more than ten persons. The ships of these companies call at points in Ecuador, Peru, and Chile.

Ancon Crusher.

A statement of the rock crushed at Ancon quarry during the week ending July 22, follows:

DATE.	Hours worked.	Cubic Yards.
July 17	7.30	2,565
July 18	4.50	2,148
July 19	7.00	2,568
July 20	5.35	2,227
July 21	7.10	2,419
July 22	6.30	2,522
Total	38.35	14,449

Missing Men.

Any one having information regarding the present whereabouts of Edward C. Morgan, who is supposed to have come to the Isthmus, is requested to communicate with THE CANAL RECORD, Ancon, C. Z.

Information is requested regarding the present whereabouts of Richard O'Brien of Concord, N. H., who was employed on the Canal from April 29, 1905, to September 18, 1909.

Information is desired regarding the present whereabouts of Albert M. Henry of Keystone, W. Va., who was employed on the Canal from April 5 to July 1, 1909.

Information is requested by the American Consulate in Panama regarding the whereabouts of Frederick William Schreiber, a photographer, who is supposed to have come to the Isthmus in April, 1911.

The Washington office has issued a circular under date of June 24, containing information for inspectors on duty in the United States, under the direction of the Isthmian Canal Commission.

Tug Service to Porto Bello, Nombre de Dios, and Toro Point.

Effective June 26, the following schedule will be maintained between Dock 13, Cristobal, Nombre de Dios, Porto Bello, and Toro Point:

Tug *Reliance* will leave Dock 13 daily, except Sundays, at 7 a. m., with two barges for Nombre de Dios, returning at once with two barges to Gatun.

Tug *Mariner* will leave Dock 13 daily, except Sundays, at 9 a. m., with three barges for Porto Bello, returning to Gatun as soon as barges are loaded.

Tug *Porto Bello* will leave Dock 13 Saturdays at 9 a. m., light, for Porto Bello. This tug will leave Porto Bello, light, at 2 p. m., arriving at Dock 4, Colon, in time for passengers to catch train No. 7, leaving Colon at 4.35

Tug *Porto Bello* will leave Dock 13 Sundays at 7 p. m., for Porto Bello, returning at once.

Tug *Mariner* will leave Dock 13 daily, except Sundays, at 6.30 a. m., for Toro Point, returning at once.

Tug *Mariner* will leave Dock 13 Sundays at 9.30 a. m., for Toro Point, returning at once

A tug will leave Dock 13 on Wednesdays, Saturdays, and Sundays, at 4.30 p. m., for Toro Point, returning at 5.30 p. m.

A tug will leave Dock 13 on the 20th of each month at 6 a. m., for Porto Bello and Nombre de Dios, returning to arrive at Dock 4, Colon, about 4.30 p. m.

CULEBRA CUT SLIDES.

New Estimate to Cover Material in Motion.

Additional breaks in the banks of Culebra Cut have caused the Central Division to revise its estimate of excavation yet to be done in that section of the Canal by adding 5,257,281 cubic yards. From the first of the fiscal year, therefore, the amount of excavation estimated for the Cut is, as follows:

	Cubic Yards.
Excavated to July 1, 1911	65,514,865
To be excavated	23,929,140
Total	89,444,005

The estimate of December, 1908, for excavation in Culebra Cut was 78,042,295 cubic yards, and, on July 1, 1910, there were added 5,467,150 cubic yards to allow for slides, and 1,005,938 cubic yards to cover breaking beyond the slope line, below the berm at 95 feet above sea level.

The addition of 5,257,281 cubic yards for slides, on account of developments during the past year, will not affect the total cost as estimated in December, 1908, nor the estimated time of completion. The cost per cubic yard was estimated in December, 1908, as 98 cents, and the most recent cost statement, that for the quarter ending March 31, shows a cost per cubic yard for that quarter of 56.92 cents, and a cost per cubic yard for the whole period—May, 1904, to March 31, 1911—of 88.01 cents. It was believed, when the estimate of 1908 was made, that the excavation in Culebra Cut could not continue for more than a year at the rate then established. This rate has not only been maintained, but it has been increased, owing to increased efficiency in the working force.

The statement published below gives, in tabular form, the history of the slides in Culebra Cut to July 1, 1911. It will be noticed that there remained on that date to be excavated from slides 5,868,120 cubic yards, and that 10,757,658 cubic yards had been excavated. Of the excavation still remaining, that from slides represents, therefore, 25 per cent. In the fiscal year, the excavation from this source amounted to 4,879,378 cubic yards.

The largest of the slides are those at Culebra, on both east and west banks, and the well-known Cucaracha slide, on the east bank immediately south of Gold Hill. This last appears to be nearly exhausted. For two months, the berm at 95 feet above sea level has been established in front of it, and the only movement noticeable is a small amount of mud carried down by the rains. There is none of the movement that for so long carried a whole section of the bank irresistibly towards the prism, sweeping away construction tracks, and pushing 100-ton steam shovels before it.

At Culebra, the plan of excavating the moving banks from the top of the slope has been in execution since January, the result being to remove the material before it slides into the Cut and interferes with drainage ditches and construction tracks, and also to lighten the mass, so that it will be less likely to slide. On the west bank, the slide includes the location of part of the village of Culebra, and, during the fiscal year, there were demolished at this place 19 old French buildings, while 37 American buildings were moved to other sites.

The total amount of material remaining in the slides in Culebra Cut represents about three and one-half times the excavation from that section during the month of June.

The statement referred to above, follows:

LOCATION OF SLIDES BY STATION TO STATION.	Area of slide in acres.	Cu. Yds. of material remaining.	Cu. Yds. material exc'd to date.	Cu. Yds. exc'd year end'g July 1, 1911.	Date when slide first developed.	Remarks.
1515+50—1521+50..	1.60	70,000	111,079	111,079	Sept. 1910	East side, opposite Bas Obispo
1541+74—1544+50..	0.60	....	18,064	....	Sept. 1908	East side, opposite Haut Obispo
1562+80—1566+04..	0.60	30,000	43,301	18,789	Nov. 1908	West side, Buena Vista.
1579+00—1593+00..	8.30	30,000	500,640	360,166	Feb. 1908	East side, Las Cascadas.
1598+50—1607+00..	4.60	40,000	286,000	134,000	Oct. 1908	East side, Whitehouse.
1619+50—1628+00..	2.90	....	145,000	119,000	Oct. 1909	East side.
1661+50—1665+00..	1.70	....	19,988	13,128	Dec. 1909	East side, upper La Pita.
1661+00—1663+00..	0.30	....	30,120	30,120	May 1910	East side, lower La Pita.
1667+00—1669+00..	0.90	10,000	63,000	63,000	Sept. 1910	West side, Cunette.
1726+00—1796+00..	46.60	3,391,300	3,714,562	1,475,776	Oct. 1907	West side, Culebra.
1796+00—1804+00..	2.60	182,470	240,300	90,688	Jan. 1907	West side, No. Contractor's Hill
1754+00—1796+00..	31.60	1,664,350	2,329,784	1,454,081	Jan. 1908	East side, Culebra.
1804+00—1832+00..	47.10	400,000	2,722,164	716,746	July 1905	East side, Cucaracha.
1811+50—1817+50..	2.00	20,000	211,036	146,228	July 1908	West side, Contractor's Hill.
1869+00—1880+00..	5.70	30,000	322,620	146,577	Mar. 1907	East side, Paraiso.
Total............	157.10	5,868,120	10,757,658	4,879,378		

PERSONAL.

The Secretary of War, Henry L. Stimson, and his party left the Isthmus for Porto Rico on July 23, on board the U. S. S. *North Carolina*.

Major General Leonard Wood, and other members of the Panama Fortification Board, with members of their families, returned to the States on the *Ancon*, which sailed from Cristobal on July 26. Brigadier General W. W. Wotherspoon, and Mrs. Wotherspoon, returned to the States on the *Allianca*, which sailed on July 25.

Justice Thomas E. Brown, Jr., returned on the *Allianca*, on Wednesday, July 19, from his annual leave of absence in the States.

Licenses for Chauffeurs.

The Board of Local Inspectors will hold an examination for chauffeurs' licenses at the Administration building, Ancon, on Wednesday, August 2, at 2 p. m. All applicants are required to have their application blanks properly filled out and endorsed before entering the examination. For information, address Board of Local Inspectors, Ancon, C. Z.

Storm in Pacific Division.

A local rain and wind storm occurred in the Pacific Division between 6 and 7 o'clock on the night of July 23. The wind at Pedro Miguel and Ancon, blowing from the east reached a maximum velocity of 25 miles an hour, and it is believed the velocity was greater over Panama Bay, near the Balboa tide station.

The tidal currents in the Pacific entrance to the Canal, at Balboa and Corozal, were temporarily reversed, the water level being forced up at a time when the tide should have been steadily receding. The tidal elevation increased 0.7 of a foot at Balboa, while, under normal conditions, it should have lowered 0.3 of a foot. At Corozal, the increase in elevation was 1.5 feet during a period in which the tide should have receded 0.4 of a foot.

French Machinery for Canal Exposition.

The Depot Quartermaster at Mount Hope has been directed to set aside pieces of machinery and equipment, included in the following list, for shipment to San Francisco, at such time as the exposition administration may desire. The list includes only selected articles of the equipment used by the French in their canal work. It follows:

Track material—Frogs, rails, switches; track with steel rails; Decauville track and turnout; Decauville turntable.

Excavating machinery—Excavators and parts at Empire, Cucaracha, and Tabernilla; crane and crane buckets; drill outfit, including drilling frame on 5-foot gage track.

Rolling stock—Two Decauville locomotives; Decauville cars, "V" and pan types; French locomotives, both types; French cars, six-meter; section of track with switch stand, and guayacan ties.

Machinery—Lathe, combination shear and punch, shaper, shear, and drill press, heavy hand shears, steam pumps, centrifugal pumps, blower, steam winches.

Hand tools—Picks, saws, axes, wrenches, drills, hammers, augurs, and other tools.

Engine—Boiler with engine, fly wheel, and pulley on top.

Miscellaneous—Letter press, fireproof safe, diving suits, mast head and side lights for ship, ship compasses, bells, binnacles, and canvas water buckets.

French Scrap.

A quantity of old French scrap collected along the Canal has been dumped on the low ground east of docks Nos. 13 and 14, where it will be held until the vessels are ready to take it. The former method was to hold the scrap on cars in the Cristobal yards pending delivery to the steamships, but too many cars were kept out of service in this way. The new plan permits handling direct to ship's side by the cantilever crane, or reloading on cars, when necessary. The storage pile affords opportunity to classify the scrap into various grades. No more scrap will be collected until bids are opened for it in the United States on September 5.

Locomotive Engineer Killed.

John Fremont Brown, a locomotive engineer employed in the Pacific Division, was run over by a Central Division engine in the Pedro Miguel yards, about 11.30 a. m., Friday, July 21, and instantly killed. He was crossing a track on his way home to his noonday meal when the accident occurred. He was a native of Zanesville, Ohio, 55 years of age, and had been on the Isthmus since August 12, 1907, coming here from Los Angeles, Cal., his place of residence in the States. His wife, now on the Isthmus, survives him.

Obituary.

H. H. Penny, a native of Pennsylvania, died at Ancon Hospital on July 16, aged 65 years. He was employed by the Central Division, with quarters at Empire, and had been on the Isthmus six years.

SOCIAL LIFE OF THE ZONE.

Women's Clubs Library at Gorgona.

A portion of the traveling library of the Canal Zone Federation of Women's Clubs has been lent to Gorgona for the benefit of the schoolchildren of that village. A room over the offices of the district quartermaster has been assigned to the federation for use as a library. Distribution of books will begin on Thursday, July 27, and thereafter, the library will be open every Thursday afternoon from 3 to 5 o'clock. The library is free to all children residing in Gorgona, but a deposit of seventy-five cents on each book is required to cover its cost. A fine of five cents a week, or less, will be imposed for keeping books out longer than two weeks. The library is in charge of the librarian of the Canal Zone Federation, and all communications regarding it may be addressed to her at Gorgona.

Public Playgrounds.

The playground equipment, consisting of swings, bars, and ladders, which was placed on Cristobal Point by the philanthropy department of the Cristobal Woman's Club, has been purchased by the Gatun Playground Association, and will be removed to the Gatun playground before the opening of the school year.

The municipality of Colon has granted the use of the public playground to the schools of the city, each school having been provided with a key to the ground. Special hours have been designated to each group for hours of directed play.

Church Notes.

St. Luke's Sunday school, Ancon, will hold its annual picnic the first week in August. Details, which will be arranged by the woman's guild, will be announced later.

The Rev. Father McCarty, a priest of the St. Vincentian Fathers, has arrived on the Isthmus to take up work as assistant in the parish of St. Ferdinand's Roman Catholic church at Empire. The work on the parish house is nearly completed, and the priests will take up residence there within a short time.

Four missionaries of the Methodist Episcopal church were in Panama during the week of July 10 to 17, in transit to their several posts in Peru, Bolivia, and Chile. One of their number, the Rev. W. W. Brownlee, preached at the sea wall church on Sunday, July 16.

The Woman's Foreign Missionary Society of the Methodist church will meet at the home of Mrs. Stroupe, Corozal, on Thursday, August 4.

Red Cross Dance.

A subscription dance for the benefit of the endowment fund of the American National Red Cross Association, will be held at the Commission clubhouse in Gatun, under the auspices of the Gatun chapter, Saturday evening, August 5. Tickets are $1, United States currency, and may be procured at the various clubhouses in the Canal Zone, or from any of the following committee: R. M. Sands, Reed E. Hopkins, W. E. Stoney, Frank E. Shuck, D. T. Chamberlain, Dan St. Clair, and O. J. Ruch. Train service after dance.

I. O. O F.

At a regular meeting of the Isthmian Canal Lodge, No. 1, I. O. O. F., held in the Commission lodge hall at Gorgona, on July 18, the following officers were installed by District Deputy Grand Sire B. F. Sisson of Gatun: Noble grand, H. L. Greeley; vice-grand, E. W. Stevens; secretary, R. A. Schofield; treasurer, C. E. Whipple; warden, L. A. Taber; conductor, D. H. Schultz; right supporter, noble grand, C. H. Beetham; left supporter, noble grand, Robt. Varenkamp; right supporter, vice-grand, B. F. Henkle; left supporter, vice-grand S. E. Calvit; chaplain, W. T. Clements; right scene supporter, Henry R. Naecker; left scene supporter, Samuel F. Naecker; inner guard, C. J. Jansen; outer guard, R. R. Robinson.

The Canal Zone Humane Society.

The annual meeting of the Canal Zone Humane Society, with election of officers, will be held at the Hotel Tivoli on Sunday, August 13. The society wishes to state that any cases of ill treatment of animals, or children, in the Canal Zone may be reported to the local police, or a statement of the same be made in writing to the secretary of the Canal Zone Humane Society, Ancon, C. Z.

Spanish War Veterans.

There will be a recruiting meeting of the United Spanish War Veterans in building No. 1, Cristobal, on Sunday afternoon, July 30, 1911, at 1.30 p. m. All eligibles are invited to attend.

Special recruiting meetings of Camp Chagres, No. 2, U. S. W. V., will be held in the I. C. C. lodge hall at Ancon, at 7 p. m. on July 29, and at 9 a. m. on August 6, in the Kangaroo Hall at Empire.

New P. R. R. Time Table.

Time table No. 10 of the Panama Railroad Company went into effect on Monday, July 24, at 12.01 a. m. The new schedule does away with the shuttle train service formerly operated between Colon and Gatun, the regular trains making stops, as indicated in the time table, at the intermediate stations. Train No. 72, which formerly left Panama on Saturday nights only at 7.30 o'clock, has been taken off. No. 73, leaving Colon at 12.30 a. m. on Sundays only, will be a mixed train, carrying one or two passenger coaches. There have been no radical changes as regards the arrival and departure of the other trains, but the running time of all trains has been lengthened, making the schedule 10 to 15 minutes longer.

PANAMA RAILROAD COMPANY.

PASSENGER TRAIN TIME TABLE No. 10—IN EFFECT JULY 24, 1911.

SOUTHWARD.												NORTHWARD.										
SUN. ONLY.*	SAT. ONLY	SUNDAY ONLY.					DAILY EXCEPT SUNDAY.			Miles from Colon.	STATIONS.	DAILY EXCEPT SUNDAY.				SUNDAY ONLY.						SUN. ONLY
73	71	29	27	25	23	21	7	5	3			2	4	6	8	20	2	24	26	28	30	74
A. M.	P. M.	P. M.	P. M	P. M.	A. M.	A. M.	P. M.	A. M.	A M		Leave. Arr.	A. M.	P. M.	P. M.	P. M.	A. M.	P. M.	P. M	P. M.	P. M.	P. M.	A. M.
12.30	6.00	7.00	4.00	1.00	10.00	6.45	4.35	10.30	5.20	0.00	†Colon..........	8.50	1.00	3.45	7.45	9.00	12.15	3.15	6.15	9. 5	11.55	2.05
12.35	s 6.05	s 7.05	s 4.05	s 1.05	s 10.05	s 6.50	f 4.40	f 10.33	f 5.25	1.77	†Mt. Hope ...	s 8.47	f 12.57	f 3.43	f 7.42	s 8.57	s 12.12	s 3.12	s 6.12	s 9.12	s 11.52	s 2.03
12.45	6.10	f 7.10	4.10	1.10	f 10.10	6.55	4.45	10.38	s 5.31	4.37	†Mindi	s 8.41	f 12.51	f 3.38	f 7.36	f 8.51	12.06	3.06	6.06	9.06	f 11.46	1.57
	6.15	f 7.16	f 4.16	f 1.16	f 10.16	f 7.01	f 4.50	f 10.43	f 5.36	5.94	New Gatun...	s 8.35	f 12.45	f 3.32	f 7.30	s 8.46	f 12.01	f 3.01	f 6.01	f 9.01	f 11.41	1.52
																	P. M					
s 12.58	s 6.18	s 7.20	s 4.20	s 1.20	s 10.20	s 7.05	s 4.53	s 10.47	s 5.41	6.79	†Gatun.........	s 8.31	s 12.41	s 3.29	s 7.26	s 8.41	s 11.56	s 2.56	s 5.56	s 8.56	s 11.37	s 1.50
1.23	f 6.41	s 7.44	f 4.44	f 1.44	f 10.44	f 7.29	f 5.16	f 11.11	f 6.05	15.26	†Bohio	s 8.06	f 12.16	f 3.04	s 7.01	s 8.16	s 11.31	s 2.31	s 5.31	s 8.31	f 11.16	f 1.25
1.32	f 6.47	s 7.51	s 4.51	s 1.51	s 10.51	f 7.36	f 5.22	f 11.18	f 6.12	18.51	Frijoles..	s 7.59	s 12.09	f 2.57	s 6.54	s 8.09	s 11.24	s 2.24	s 5.24	s 8.24	s 11.10	f 1.18
s 1.42	s 6.53	s 7.58	s 4.58	s 1.58	s 10.58	s 7.43	s 5.28	s 11.25	s 6.19	21.37	†Tabernilla ...	s 7.52	s 12.02	s 2.50	s 6.48	s 8.03	s 11.18	s 2.18	s 5.18	s 8.18	s 11.04	s 1.11
													P. M.									
1.49	s 6.57	s 8.03	s 5.03	s 2.03	s 11.03	s 7.48	s 5.32	s 11.29	s 6.23	23.30	†San Pablo...	s 7.46	s 11.56	s 2.44	s 6.41	s 7.58	s 11.13	s 2.13	s 5.13	s 8.13	s 10.59	s 1.05
1.55	f 7.03	f 8.09	f 5.09	f 2.09	f 11.09	f 7.54	f 5.38	f 11.35	f 6.30	25.74	†Mamei	f 7.40	f 11.50	f 2.38	f 6.35	f 7.52	f 11.07	f 2.07	f 5.07	f 8.07	f 10.53	f 12.59
s 2.08	s 7.11	s 8.15	s 5.15	s 2.15	s 11.15	s 8.00	s 5.46	s 11.44	s 6.38	28.27	†Gorgona	s 7.32	s 11.42	s 2.31	s 6.27	s 7.46	s 11.01	s 2.01	s 5.01	s 8.01	s 10.47	s 12.53
s 2.15	s 7.16	s 8.20	s 5.20	s 2.20	s 11.20	s 8.05	s 5.51	s 11.49	s 6.43	29.68	†Matachin ...	s 7.26	s 11.36	s 2.25	s 6.21	s 7.40	s 10.55	s 1.55	s 4.55	s 7.55	s 10.41	s 12.47
s 2.21	s 7.20	s 8.25	s 5.25	s 2.25	s 11.25	s 8.10	s 5.55	s 11.55	s 6.48	31.01	†Bas Obispo...	s 7.22	s 11.32	s 2.21	s 6.17	s 7.35	s 10.50	s 1.50	s 4.50	s 7.50	f 10.36	s 12.42
								P. M.														
s 2.35	s 7.26	s 8.31	s 5.31	s 2.31	s 11.31	s 8.16	s 6.01	s 12.02	s 6.55	32.62	Las Cascadas.	s 7.16	s 11.26	s 2.15	s 6.11	s 7.29	s 10.44	s 1.44	s 4.44	s 7.44	s 10.30	s 12.37
s 2.45	s 7.32	s 8.37	s 5.37	s 2.37	s 11.37	s 8.22	s 6.07	s 12.09	s 7.02	34.91	†Empire.......	s 7.11	s 11.21	s 2.10	s 6.06	s 7.23	s 10.38	s 1.38	s 4.38	s 7.38	s 10.24	s 12.31
s 2.53	s 7.38	s 8.43	s 5.43	s 2.43	s 11.43	s 8.28	s 6.13	s 12.15	s 7.08	35.90	†Culebra	s 7.05	s 11.15	s 2.04	s 6.00	s 7.17	s 10.32	s 1.32	s 4.32	s 7.32	s 10.16	s 12.25
s 3.03	s 7.48	f 8.52	f 5.52	f 2.52	f 11.52	f 8.37	6.23	12.25	7.18	39.77	†Paraiso Jct...	6.52	11.02	1.51	5.47	f 7.06	f 10.21	f 1.21	f 4.21	f 7.21	f 10.04	f 12.12
s 3.12	s 7.50	s 8.54	s 5.54	s 2.54	s 11.54	s 8.39	s 6.25	s 12.27	s 7.20	40.15	†Pedro Miguel	s 6.50	s 11.00	s 1.50	s 5.45	s 7.04	s 10.19	s 1.19	s 4.19	s 7.19	s 10.01	s 12.10
	s 7.56	s 8.59	s 5.59	s 2.59	s 11.59	s 8.44	s 6.31	s 12.32	s 7.26	41.66	Miraflores...	s 6.44	s 10.54	s 1.44	s 5.39	s 6.59	s 10.14	s 1.14	s 4.14	s 7.14	s 9.55	s 12.04
					P. M																	A. M
s 3.25	s 8.04	s 9.07	s 6.07	s 3.07	s 12.07	s 8.52	s 6.39	s 12.39	s 7.33	44.16	†Corozal	s 6.37	s 10.47	s 1.37	s 5.32	s 6.52	s 10.07	s 1.07	s 4.07	s 7.07	s 9.48	s 11.57
	f 8.05	f 9.09	f 6.09	f 3.09	f 12.09	f 8.54	f 6.41	f 12.41	f 7.35	44.84	Camp Diablo	s 6.35	f 10.45	f 1.35	f 5.30	f 6.50	f 10.05	f 1.05	f 4.05	f 7.05	f 9.45	s 11.55
3.30	8.10	9.15	6.15	3.15	12.15	9.00	6.45	12.45	7.40	47.07	†Panama ..	6.30	10.40	1.30	5.25	6.45	10.00	1.00	4.00	7.00	9.40	11.50
A. M	P. M.	P. M.	P. M	P. M.	P. M.	A. M.	P. M.	P. M.	A. M		Arr. Leave.	A. M.	A. M	P. M	P. M.	A. M.	A. M	P. M.	P. M.	P. M.	P. M.	P. M.
73	71	29	27	25	23	21	7	5	3		†Tel. station. f Flag station. s stop.	2	4	6	8	20	22	24	26	28	30	74

* No. 73 is a mixed train, carrying one or two first class coaches.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

COROZAL.

An informal social was held in the gymnasium on Wednesday evening, July 19, and the following program was rendered: Magazine contest; cracker whistling contest, by six boys; vocal solo, J. E. Conn; short stories, J. E. Cunningham; piano solo, Mr. Potwin; refreshments. Plans were made for a reception to Mr. Kramer, the returning secretary, to be held in the gymnasium on Wednesday evening July 26.

CULEBRA.

The chess game by wireless, between Culebra and Porto Bello, was won by Culebra in 31 moves. In the 16th move, Porto Bello sacrificed a piece, but obtained only temporary advantage in position, and, at the 25th move, was playing on the defensive, Culebra having clear advantage of one piece.

The high duckpin scores for last week are, as follows: Huttlemaier, 106, 104, 100, 110, 104, 105, 100, 100; Cornthwaite, 102; Fox, 111, 102, 101; Palmer, 111; Brown, 101; Wheeler, 104, 107; Case, 105, 116; Stearns, 101.

In a match game on July 19, the following record was made in duckpins: Huttlemaier, 100; Fox, 102; Palmer, 111; Brown, 101.

The hotel defeated the Administration building basketball team on Thursday, July 20, by a score of 68 to 26, thus winning two out of three games.

The Culebra basketball team played the first game of the season on Saturday July 22, with Gatun, defeating the visitors by a score of 32 to 25.

A handball tournament was begun last week with 16 men competing for gold, silver, and bronze medals. Another handicap tournament, and a two-man tournament, will be started in the near future.

On Saturday, July 29, the Culebra basketball team will play the Corozal team at Culebra.

In addition to the regular afternoon gymnasium class, an evening class for advanced gymnasium work will begin next week, meeting on Tuesday and Friday evenings at 8 o'clock. Regular basketball practice will be held immediately after the gymnasium class.

EMPIRE.

The literary and debating society has elected the following officers for the next six months: President, J. C. Foreman; vice-president, H. W. Sawtelle; secretary-treasurer, H. W. Dohrmann; executive committee, Messrs. Foreman, Harlan, Dickson, program committee, Messrs. Sawtelle, Hall, Conner; membership committee, Messrs. Dohrmann, Ross, King. The subject of the debate on July 28 will be "Resolved, that the standing armies are detrimental to human progress." Affirmative, Carl Anderson; negative, Robert Browning.

The first Saturday night "Open house" was held on the 22d, and was well attended. The program consisted of orchestra, music, bowling, pool, and basketball tournament games. Refreshments were served in the lobby.

The leaders in the boys' duckpin tournament are, as follows:

	Won.	Lost.	P.C.
Farrell	2	0	1,000
Zinn	2	0	1,000
Witt	5	2	714
Benninger	5	2	714
Kimball	2	1	666

After a vacation of three months, the musical and dramatic society resumed its rehearsals on the 25th. The musical section will give a sacred concert on Sunday evening, August 6, at 8.30 o'clock.

The result of the July handicap tournament is, as follows: First place, Pearson; second place, Barnes, third place, Earle.

The following high scores were made on the bowling alleys during the week: Gorham, 220, 206, Parkis, 212; Potter, 211; Anderson, 213.

GORGONA.

Friday evening, July 21, a "Promenade social" was held in the gymnasium. Refreshments, consisting of pumpkin pie and cocoa, were served. The following program was rendered: Whistling solo, Miss Stein Cross; piano solo, Mrs. Swain; vocal solo, George A. Ringger; vocal solo, Mr. Donaldson; vocal solo, Miss Otis. In addition to the above, a program was rendered by the Panama orchestra.

The monthly song service was held last Sunday night. The Rev. C. H. Elliott of Colon delivered a very interesting and instructive talk on Robert E. Lee, and patriotic songs were sung by the audience and male chorus. T. S. Booz led the singing, and Mrs. Booz played the piano.

At a recent meeting of the physical department committee, it was decided to start gymnasium work on Monday, July 31, the class to meet thereafter for ten weeks on every Monday and Thursday evening at 8 p. m. On every Monday night, for a half-hour before gymnasium class, there will be a talk on health. It was also decided to devote a night every two weeks, after the gymnasium work, to an informal social gathering.

GATUN.

On Wednesday evening, July 26, the literary club discussed the present political situation in the United States. President Wantland who recently returned from his vacation, occupied the chair. On account of the illness of three of the Cristobal debaters, the joint debate between Cristobal and Gatun has been indefinitely postponed.

The chess and checker club has decided to hold a preliminary tournament, beginning Monday, July 24, and continuing until Saturday, August 12, for the purpose of classifying the players. To obtain a rating, each player must play at least three-fourths of all those who enter, each playing two games with every other player. Any player who fails to meet enough men to earn a rating will be put in the first, or highest, class in the subsequent handicap tournament.

The wrestling class met on Wednesday, July 26, under the direction of Mr. Huber.

The clubhouse has been presented with a snake skin, ten feet long, of the boa constrictor species; also, a stuffed armadillo.

Thirty-five books of fiction, and twenty-five phonograph records, were purchased during the past week.

CRISTOBAL.

The wrestling class is meeting regularly every Monday night at 7.30. The catch-as-catch-can form is being taught. All members are eligible.

On Tuesday and Thursday nights at 8 o'clock, the regular gymnasium class meets. Calisthenics, cross and long horse, parallel bars, marching, and tumbling, are taught. This class is open to all members.

At a meeting of the literary and debating club, on the night of July 12, the principal speaker was Mr. Tracy Robinson, whose subject, "A great adventure and its results in tropical America," was a résumé of the history of the Isthmus since the beginning of the Panama railroad, together with personal experiences of 30 years in Panama.

The club held a debate on July 19, subject, "Resolved, that the Panamanian lottery should be abolished for the benefit of the community." The vote of the judges was two for the affirmative, and one for the negative.

On Saturday night, the moving picture show by men from the United States armored cruiser, *North Carolina*, was attended by the largest audience in several months.

In the elimination tenpin tournament last Saturday night, Grover was defeated in the finals by Wallace. On next Saturday night, at 7.30 o'clock, similar matches will be held in both duckpins and tenpins. These are open to all members, and no admission fee is charged.

The following high scores were made during the week ending July 22:

Duckpins—Smith, 104, 105, 100, 116; Weston, 101; Jacques, 102; Wood, 100, 102; Wheeler, 100.

Tenpins—Ballard, 229, 211, 205, 202; Barrett, 202, Furlong, 218; Wheeler, 215, Collins, 201; Gibson, 208; Blackburn, 200.

On August 7, a handicap tenpin tournament will be started, and all bowlers are urged to participate. Entries will be received at any time before that date.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Gatun, C. Z., on Sunday, July 30, at 5 p. m. The program follows:

1 March—*Love of Liberty*	Scouton
2 Selection—*The Girl of My Dreams*	Hoschna
3 Waltz—*Gaite*	Waldteufel
4 Nautical Fantasia	Tobani
5 Idyl—*Garden of Roses*	Pratt
6 Medley Overture—*Head Lights*	Schulz
7 Characteristic—*Muttering Fritz*	Losey
8 Selection—*Robin Hood*	De Koven
9 Popular Number—*On, Wisconsin*	Purdy

OLIVER KIMBALL, *Acting Musical Director.*

The next concert will be given at Cristobal, C. Z., on Sunday, August 6.

Supplies for Canal Work.

The following steamers with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal, and Colon, during the week ending July 22:

Prinz Sigismund, July 15, from New York, with 86 bales of waste for stock.

Clyde July 16, from New York with 20 bundles turnbuckles for stock, and 10 pieces castings for Atlantic Division.

Allianca, July 19, from New York, with 6 cases lamp chimneys, 25 cases paper napkins, 8 cases acid, 162 pieces steel beams, 58 pieces steel bars, 1,500 kegs track spikes, 10 barrels brass valves, for stock, 53 cases drugs for Sanitary Department; 5 cases steel cabinets for Central Division; 400 pieces castings, 400 bundles brake shoes, 4 cases car parts, for Mechanical Division, and a miscellaneous cargo, the whole consisting of 2,774 pieces, weighing 251 tons.

Ancon, July 19, from New York, with 53,475 barrels cement for Atlantic and Pacific Divisions.

Dania, July 19, from Baltimore with 2,626 pieces steel plates, 36 pieces steel channels, 55 pieces steel bars, 150 pieces steel angles, 2,565 pieces steel beams, 400 cases turpentine, 268 pieces sewer pipe, 335 tons coal, for stock; 16 pieces steel channels, 1,300 pieces steel angles, 17 cases lock material, 68 bundles lock material, 13 pieces lock material for Atlantic Division, 9 pieces lock material, 45 bundles lock material, 10 cases lock material, for Pacific Division, 7 cases jacks, 700 car wheels, for Mechanical Division.

Atenas, July 20, from New Orleans, with 1,089 bales hay, 562 bales straw, 182 pieces lumber, for stock; 419 pieces lumber for Mechanical Division.

Metapan, July 21, from New York, with 9 cases stationery, 6 cases scales, for stock; 8 cases fire hose for Fire Department.

OFFICIAL CIRCULAR.

GATUN, C. Z., July 20, 1911.

Effective August 1, 1911, and during the leave period of R. M. Sands, Chief Clerk, Ben Jenkins, Assistant Chief Clerk, will act as Chief Clerk of the Atlantic Division.

WM. L. SIBERT, *Division Engineer.*

Misdirected Letters.

ANCON, C. Z., July 26, 1911.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received in the office of the Director of Posts and may be secured upon request of addressee.

Adams, G. R. (2)
Andrews, Isaac
Angell, Chester
Arthur, Robert T.
Ascher, Felix
Begley, Miss M. (2nd class)
Brook, Mortimer
Brown, W. H.
Bynoe, George Albert (2)
Camacho, Victor M.
Cameron, D.
Corbett, Warren
Gardiner, Mrs. Thomas B.
Gillespie, Carl B. (2)
Gissom, J. T.
Griffin, John J.
James, O. L.
McCoy, W. M.
McDermott, Chas.
McNelley, Mrs. C. J.
Or[illegible]lac, Pa[illegible]
Peden, Jos. C.
Pemberton, James Rex
Perry, H. E.
Reilley, Hubert J.
Rowley, Wm.
Russ, Michael (2)
St. John, S. W.
Teeters, Harry W.
Todt, Mrs. Fred
Viveros, Marcial
Villepion, Guy de
Wilkie, Warren
Williams, Oswald
Wilson, R. A.
Wiseman, Samuel C. L.
Woyer, J. B.

Auction Sale of Dairy Cows and Bull Calf.

ANCON, C. Z., July 18, 1911.

On Saturday, August 19, at 10 a. m., there will be sold at public sale to the highest bidder at the Ancon Hospital dairy, two dairy cows, ranging in age from seven to ten years, and one bull (calf) aged two and one-half years. The dairy is located near the insane asylum buildings in the rear of the hospital grounds. The terms of the sale will be cash.

CHAS. F. MASON, *Superintendent.*

Leasing of Government Building.

ANCON, C. Z., July 13, 1911.

Bids will be received by the Collector of Revenues up to and including August 10, 1911, for the leasing to the highest bidder, from August 16, 1911, for a period of not more than three years, of building No. 17 at Empire, owned by the Canal Zone Government. Rent to be payable monthly. The building is of French construction, two stories, and contains, in all, fifteen rooms, with a small outhouse. Bids should be in an envelope marked, "Bids for a lease to building No. 17 at Empire."

TOM M. COOKE, *Collector of Revenues.*

The following vessels arrived at, or departed from, the port of Balboa during the week ending July 22:

Arrivals—July 17, *[illegible]* from Buenaventura; *Mantaro* from Callao; July 19, *Quito*, from Guayaquil; *Limari* from Valparaiso.

Departures—July 17, *[illegible]* to Valparaiso; July 20, *Peru*, to Guayaquil; July 21, *Pleiades*, to San Francisco, *San Jose*, to San Francisco; July 22, *Mantaro*, to Callao.

LOST—Sunday evening, July 23, in Ancon, or Hotel Tivoli, a gold hat pin, pansy top, with small diamonds. Reward if returned to Mrs. A. B. Hendricks, Hotel Tivoli.

COMMISSARY DEPARTMENT.

New Hours at Culebra Commissary.

Effective July 24, the open hours at Culebra commissary will be from 8 a. m. to 1 p. m., and from 3 p. m. to 7 p. m.

All other commissaries are open from 8 a. m. to 1 p. m., and 3 p m. to 7 p. m. with the exception of the Cristobal commissary, which is open from 8 a. m. to 12.30 p. m., and from 2 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning July 22.

FRESH MEATS.	*Price.*
Mutton—Stewing per pound	6
Shoulder, neck trimmed off, (4 pounds and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter,neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing, per pound	10
Shoulder, for roasting (not under 4 pounds), per pound	12½
Chops, shoulder, per pound	16
Chops, per pound	24
Loin, for roasting, per pound	24
Cutlets, per pound	28
Pork—Loin chops or roast, per pound	14
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	8
Corned, No. 1, per pound	12
Corned, No, 2, per pound	10
Chuck roast (3 pounds and over), per pound	12
Pot roast, per pound	12½
Rib roast, second cut (not under 3½ pounds), per pound	16
Rib roast, first cut (not under 3 pounds), per pound	18
Sirloin roast, per pound	19
Rump roast, per pound	19
Porterhouse roast, per pound	20
Steak, chuck, per pound	12½
Round, per pound	13
Rib, per pound	18
Sirloin, per pound	19
Rump, per pound	19
Porterhouse (not less than 1½ pounds), per pound	20
Tenderloin (Western), per pound	24

MISCELLANEOUS.	
Caviare, Russian per tin	47, 89
Livers—Beef, per pound	7
Calf, each	60
Half, each	30
Sausage—Bologna, per pound	10
Frankfurter, per pound	12
Lieberwurst, per pound	10
Devonshire Farm	17
Sweetbread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	26
one-half dozen only	14
Bluefish, fresh, per pound	14
Halibut, fresh, per pound	15
Shads, fresh, each	70
Shad roes, fresh, per pair	35

POULTRY AND GAME.	
Chickens—Fancy roasting, milk fed, large, each	1.25
Fancy roasting, milk fed, med., each	1.00
Fancy roasting, corn fed, about 4½ pounds, each	90
Fowls, each 60, 70, 80, 90,	1.00
Ducks, Western, about 4½ pounds, each	1.00
Broilers, milk fed, each	60
corn fed, each	55
Turkeys, per pound	26
Squabs, each	35
Capons	2.10
Fryers, corn fed	60
Partridges, each	50
Grouse, each	50

CURED AND PICKLED MEATS.	
Ham—German, Westphalia, per pound	36
Sugar cured, per pound	18
Sliced, per pound	20
Half, for boiling, per pound	19
Boiled, per pound	22
Hocks, per pound	‡8
Bacon—Breakfast, whole piece, per pound	22
Breakfast, sliced, per pound	23
Pork, salt family, per pound	14
Ox Tongues each	1.00
Pig's feet, per pound	9
Tongues, per pound	14
Sliced bacon in 1-pound tins, per tin	30
In 1-pound jars, per jar	30

DAIRY PRODUCTS.	*Price.*
Butter—Creamery special, per pound	30
Cheese—Roquefort, per pound	38
Philadelphia cream, cake	18
Young America, per pound	18
Swiss, per pound	26
Edam, each	1.00
Edam, in tins, tin	25
Neufchatel, cake	6
Gouda, per pound	34
Milk (Certified), per bottle	**25
Ice cream, quart	‡25
½-gallon	‡50

VEGETABLES AND FRUITS.	
Beets, per pound	6
Corn, green, per doz	24
Cabbage, per pound	†4½
Cucumbers, per pound	10
Lettuce, per pound	10
Onions, per pound	5
Potatoes, white, per pound	†4½
sweet, per pound	2
Rhubarb, per pound	*3
Tomatoes, per pound	8
Yams, per pound	3
Apples, fancy table, per pound	10
Cantaloupes, each	†10
Grapefruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, California, per dozen	36
Watermelons, each	30

*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Rainfall from July 1 to July 22, 1911, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	1.48	3	2.81
Balboa	3.33	3	4.61
*Miraflores	1.70	6	4.34
Pedro Miguel	1.50	6	4.47
Rio Grande	1.45	6	5.09
Central Section—			
Culebra	1.29	6	4.18
*Camacho	1.11	6	4.29
Empire	.77	6	2.79
Gamboa	1.95	8	6.73
*Juan Mina	2.40	6	8.16
Alhajuela	3.92	5	8.64
*El Vigia	4.20	5	8.46
*Gorgona	1.64	8	5.75
San Pablo	1.68	6	4.84
Bohio	2.28	5	6.63
*Monte Lirio	2.93	5	9.90
Atlantic Section—			
Gatun	1.60	5	5.56
*Brazos Brook	3.97	5	12.24
Cristobal	3.88	5	13.49
Porto Bello	3.24	2	10.07

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

†To 5 p. m., July 21.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, July 22, 1911. All heights are in feet above mean sea level.

DAY AND DATE.	STATION.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun., July 16	126.8	93.2	46.0	16.6	16.4
Mon., July 17	126.7	93.1	45.9	16.2	16.0
Tues., July 18	126.6	93.0	45.8	15.7	15.6
Wed., July 19	126.5	93.0	45.7	15.3	15.2
Thurs., July 20	126.4	92.9	45.6	14.9	14.8
Fri., July 21	126.8	93.4	45.6	14.6	14.5
Sat., July 22	127.4	93.6	46.5	14.3	14.3
Height of low water	125.0	92.0	44.0		

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending August 2, 1911, (75th meridian time):

DATE.	Low.	High.	Low.	High.	Low.
	A.M.	A.M.	A.M.	P.M.	P.M.
July 27	......	4.31	10.46	4.48	11.08
July 28	......	5.20	11.35	5.37	11.55
			P.M.		
July 29	......	6.06	12.22	6.25	......
July 30	12.43	6.51	1.10	7.12	......
July 31	1.30	7.37	1.58	7.59	......
August 1	2.18	8.25	2.50	8.50	......
August 2	3.08	9.14	3.43	9.45	......

LOST—One gold cuff button, bearing the monogram "O. M. E." Reward offered for its return to the office of the Superintendent, Ancon Hospital.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to changes.

NEW YORK TO CRISTOBAL.

Advance	P. R. R.	Tuesday	July 25
Cristobal	P. R. R.	Thursday	July 27
Colon	P. R. R.	Monday	July 31
Allianca	P. R. R.	Saturday	Aug. 5
Panama	P. R. R.	Saturday	Aug. 12
Advance	P. R. R.	Friday	Aug. 18
Colon	P. R. R.	Thursday	Aug. 24
Allianca	P. R. R.	Wednesday	Aug. 30
Panama	P. R. R.	Tuesday	Sept. 5
Advance	P. R. R.	Monday	Sept. 11
Colon	P. R. R.	Monday	Sept. 18
Allianca	P. R. R.	Saturday	Sept. 23
Panama	P. R. R.	Friday	Sept. 29
Advance	P. R. R.	Thursday	Oct. 5

CRISTOBAL TO NEW YORK.

Panama	P. R. R.	Monday	July 31
Advance	P. R. R.	Sunday	Aug. 6
Colon	P. R. R.	Saturday	Aug. 12
Allianca	P. R. R.	Friday	Aug. 18
Panama	P. R. R.	Thursday	Aug. 24
Advance	P. R. R.	Wednesday	Aug. 30
Colon	P. R. R.	Tuesday	Sept. 5
Allianca	P. R. R.	Monday	Sept. 11
Panama	P. R. R.	Sunday	Sept. 17
Advance	P. R. R.	Saturday	Sept. 23
Colon	P. R. R.	Saturday	Sept. 30
Allianca	P. R. R.	Friday	Oct. 6
Panama	P. R. R.	Thursday	Oct. 12

NEW YORK TO COLON.

Zacapa	U. F. C.	Thursday	July 20
Prinz Eitel Friedrich	H.-A.	Friday	July 21
Atrato	R. M.	Saturday	July 22
Almirante	U. F. C.	Thursday	July 27
Prinz Aug. Wilhelm	H.-A.	Saturday	July 29
Santa Marta	U. F. C.	Thursday	Aug. 3
Prinz Sigismund	H.-A.	Friday	Aug. 4
Thames	R. M.	Saturday	Aug. 5
Metapan	U.F. C.	Thursday	Aug. 10
Prinz Joachim	H.-A.	Saturday	Aug. 12
Zacapa	U. F. C.	Thursday	Aug. 17
Prinz Eitel Friedrich	H.-A	Friday	Aug. 18
Almirante	U. F. C.	Thursday	Aug. 24
Prinz Aug. Wilhelm	H.-A	Saturday	Aug. 26

COLON TO NEW YORK.

Metapan	U. F. C.	Thursday	July 27
Prinz Joachim	H.-A.	Tuesday	Aug. 1
Zacapa	U. F. C.	Thursday	Aug. 3
Prinz Eitel Friedrich	H.-A.	Saturday	Aug. 5
Almirante	U. F. C.	Thursday	Aug. 10
Prinz Aug. Wilhelm	H.-A.	Tuesday	Aug. 15
Santa Marta	U. F. C.	Thursday	Aug. 17
Prinz Sigismund	H.-A.	Saturday	Aug. 19
Metapan	U. F. C.	Thursday	Aug. 24
Prinz Joachim	H.-A.	Tuesday	Aug. 29
Zacapa	U. F. C	Thursday	Aug. 31

NEW ORLEANS TO COLON.

Turrialba	U. F. C.	Saturday	July 22
Abangarez	U. F. C.	Saturday	July 29
Atenas	U. F. C.	Saturday	Aug. 5
Turrialba	U. F. C.	Saturday	Aug. 12
Abangarez	U. F. C.	Saturday	Aug. 19
Atenas	U. F. C.	Saturday	Aug. 26

COLON TO NEW ORLEANS.

Atenas	U. F. C.	Thursday	July 27
Turrialba	U. F. C.	Thursday	Aug. 3
Abangarez	U. F. C.	Thursday	Aug. 10
Atenas	U. F. C.	Thursday	Aug. 17
Turrialba	U. F. C.	Thursday	Aug. 24
Abangarez	U. F. C.	Thursday	Aug. 31

Hamburg-American steamers leave Colon for New York via Kingston at 10 a. m. on sailing dates. The *Prinz August Wilhelm* and *Prinz Joachim* call at Santiago de Cuba, on both outward and homeward voyages. A ship will leave Colon for Bocas del Toro at 5 p. m. on August 9; and for Port Limon at 5 m., on July 26, and August 9.

The Leyland line steamer *William Cliff* sails for New Orleans, via Port Limon, on or about July 29.

Royal Mail steamers leave for New York on alternate Tuesdays, at 12 noon; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships for New York via Kingston on Thursday at 11 a. m.; for Bocas del Toro on Monday at 6 p. m.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, AUGUST 2, 1911. No. 49.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

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Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Rails for Lock Towing Machines.

A contract for about one-half of the total amount of steel rail required for the track of the towing machines along the walls of the locks has been let to the Bethlehem Steel Company, the lowest bidder, which offered open hearth rail at $31.35 a ton. The amount of the contract is 1,250 gross tons of 90-pound steel rail, 85 per cent in 30-foot, and 15 per cent in 33-foot lengths. The original bids were opened on May 10, but on account of high prices new bids were asked for, and foreign competition was invited. The second bids were opened on July 18, and the lowest prices offered were 50 cents per ton less for open hearth, and 35 cents per ton less for Bessemer rail. No bids were submitted by foreign manufacturers.

Cranes and Skips for Breakwater Quarry at Porto Bello.

A contract for three locomotive cranes, to be used in loading rock from the quarry at Porto Bello upon barges for transport to the breakwater at the Atlantic entrance to the Canal, has been let to the Industrial Works at Bay City, Mich., for $28,800. These cranes are to have a maximum radius of 30 feet, and a minimum of not more than 12 feet, a capacity with outriggers at 20-foot radius of at least 80,000 pounds, and at 25-foot radius of 60,000 pounds; and without outriggers at 15-foot radius of at least 40,000 pounds, and at 30-foot, at least 16,000 pounds.

They must be mounted on a steel car, carried on two four-wheel trucks, so constructed as to be handled easily on a 30-degree curve, and to propel itself on a 3 per cent grade. The cranes are to be used at Porto Bello in quarrying large rock for the armoring of the breakwater in Colon Harbor. Their work will be to lift loaded skips, weighing approximately 15 tons, from the ground to flat cars, empty skips from cars to ground, and to load stones of over one cubic yard into the skips by means of hooks. For this latter purpose, a single line rapid running auxiliary hoist is provided, the rope to run over the sheave at the extreme end of the boom, and the arrangement such that the hoist may be operated alone, or at the same time as the main block. The hoist must have a capacity of at least five tons.

A contract for 32 skips, to be used in the work of quarrying above described, has been let to the Kittoe Boiler and Tank Company of Canton, O., at $246 each. These skips are to be of steel plate, angles and rail, outside dimensions 10 by $8\frac{1}{2}$ feet by $29\frac{1}{4}$ inches. The plate is to be 5-8 inch steel, bottom and side rails of 70-pound standard steel rail, continuous in length over bottom and sides; top edge of plate to be reinforced with 6 by 6 by $\frac{3}{4}$-inch steel angles; back and front slinging chains hung on a single link.

Materials for Relocation of Panama Railroad.

A requisition has been made for the following materials for use on the relocation of the Panama railroad: Two thousand gross tons of 90-pound open hearth steel rail; 8,000 pairs of 4-hole slice bars; 1,000 extra special track bolts; 160,000 "Economy" No. 9 rolled steel, 4-hole tie plates; 400,000 screw spikes, five inches long under flange and 7-8 inch diameter; 8,000 special joint tie plates; 17,000 special joint screw spikes, 5 15-16 inches long.

Colon Breakwater.

At the close of work on July 31, the double track trestle for the Colon breakwater had been extended for a distance of 5,972 feet, or over one-half of its ultimate length, and 406,069 cubic yards of material had been dumped for the embankment fill, most of which has so far been used in making the fill under water, so that a comparatively small portion appears above the surface. The record of operations at the quarries on Toro Point shows that a total of 453,791 cubic yards of material had been excavated up to the above date. It is planned to begin the work of armoring the outer sides of the breakwater with rock from the Porto Bello quarry about September 1.

Intake Bridges and Decking Material.

Bids will be opened at the Washington office on August 7 for material for four intake bridges, and the structural material for decking over the operating machinery chambers in the locks. The bridges are for the locks at Pedro Miguel and Miraflores. They are to be built of steel plate girders, three in each bridge, and are designed to carry 500 pounds live load per square foot, or a 15-ton locomotive crane. They will connect the side walls of the locks with the wing walls, and their purpose is to carry the electric towing locomotives. Each bridge will have a clear span of 50 feet, will be $27\frac{1}{2}$ feet wide, and the girders will be six feet deep. The steel will be encased in concrete, to protect the metal and to make the bridges harmonize with the other concrete work of the locks. Each bridge will weigh about fifty tons. The decking referred to consists of steel I-beams, which will be riveted together to form the support for the concrete decking over the chambers in which the machinery will be installed.

Canal Legislation.

A bill was introduced in the House of Representatives on July 12 by the Hon. Robert C. Wickliffe of Louisiana, providing for the disposal of Canal equipment after it is no longer needed in Panama.

Addition to Hotel Tivoli.

Plans are being prepared in the office of the Constructing Quartermaster for a new wing to be built immediately in the rear of the brick, or fireproof, section of the Hotel Tivoli. It will be 102 feet long, and 38 feet 2 inches wide, of the same type of construction as the other two wings, surrounded with 10-foot verandas on the first, second, and third floors. The side of the hill, on which the foundation piers for the addition will stand, slopes at the rate of about one foot in five, and advantage will be taken of this slope by building a basement, which will occupy about 80 feet of the outer end of the wing. The billiard room and barber shop, now on the first floor in the old part, will be moved to this basement, which will also furnish room for the storage of baggage and other effects.

The completion of the extension will considerably alter the present first floor arrangements. The sun parlor will be taken out, and the greater part of the space in the new wing on this floor will be a new ballroom and may in times of congestion be devoted to additional dining room accommodations. The present stairway will remain, but the men's toilet in the rear of it will be removed, and, in its place, there will be a basement staircase. This stairway will descend into a passage, formed by tunneling from its foot to where the basement wall begins. On the other side of the basement staircase, or about where the west wall of the office floor is now, will be the elevator shaft extending from the third floor to the basement. Midway between the basement and first floors, there will be a landing where people in the billiard room or barber shop can take the elevator by ascending a short flight of steps.

The space on the first floor, formerly occupied by the barber shop and billiard room, together with the present ballroom, will be partitioned off, and fitted up as rooms for guests, giving about 18 rooms for the purpose on that floor. The second and third floors in the new part, will be entirely converted into first-class rooms for guests, 10 on a floor, each provided with a private bath. A private bath, 4 by 8 feet, has recently been added to each of the rear rooms on the second and third floors in the old part of the hotel. The heights between floors in the new wing, which correspond with those in the other parts

NOTES OF PROGRESS.

(Continued.)

of the building, with the exception of the proposed basement, will be, as follows: Basement, 14 feet; first floor, 15 feet; second and third floors, 12½ feet each.

Upon completion of the addition, the Tivoli will have added about 16,000 square feet of floor space; a total seating capacity in dining rooms of between 700 and 750, as compared with 400 at present, and a total of 218 rooms for guests, as compared with 180 at present. The estimated cost of the new improvements is $60,000.

Gatun Dam Spillway.

The concrete work in the Spillway of Gatun Dam is about 66 per cent completed, 148,236 cubic yards, out of a total of 225,000, having been placed at the close of work on July 29. A statement of the amount laid each work day last week, and of the total in place, follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
July 24	234	8.00	2
July 25	256	8.30	1
July 26	260	8.00	1
July 27	236	8.00	1
July 28	208	8.00	1
July 29	220	8.00	1
Total	1,414	48.30	1.17
Previously reported	146,822		
Grand total	148,236		

Advices from Washington indicate that the House Committee on Appropriations will visit the Canal Zone prior to the reassembling of Congress in December, in connection with the estimates of appropriations for the fiscal year 1913.

Cristobal Laundry.

The laundry plant of the commissary department, Panama Railroad Company, was opened on April 18, 1907, with a force consisting of one superintendent and 37 West Indian employes. The first month's business amounted to $846.84. Since that time, the business has greatly increased. Employes of the Panama Railroad Company and the Isthmian Canal Commission all over the Isthmus, including those at such isolated points as Monte Lirio, Porto Bello, Nombre de Dios, etc., have their work done at the Commissary laundry.

The force has grown to consist of one superintendent and five skilled American laundrymen, together with a West Indian force of 139 employes, divided, as follows: Twenty-two manglers, 5 starchers, 3 collar machine operators, 1 hand washer, 10 assorters, 6 checkers, 6 clerks, 2 messengers, 2 watchmen, 6 washers, 4 dryers, 3 shirt machine operators, 2 markers, 67 ironers.

In March, 1911, 363,063 pieces were laundered, and the total receipts were $9,245.79. Prices charged in the commissary laundry are lower than prices for similar work in the States. In spite of the fact that prices have been lowered several times, the laundry has been operated at a fair profit for two years, after it has been charged with every item of expense involved in operation.

The plant covers an area of 14,320 square feet, and is housed in a corrugated iron building, with a roof of the same material, the floor being of concrete. It is thoroughly equipped with improved laundering machinery, including washers, wringers, steam drying rooms, mangles, starchers, collar ironers, and electric hand irons. This machinery is operated from the central power plant of the commissary department.

Laundry received at the plant on Monday or Tuesday is generally returned on Thursday, and, in cases of emergency, is ready for delivery the day after its receipt. Packages are collected from the houses of customers all over the Isthmus by wagons, and are delivered in the same manner without additional charge.

In addition to the regular work, quantities of flat work are handled for hotels and steamship lines, and rough dry work is done for families desiring it. A cleaning and pressing plant is successfully operated.

CONCRETE WORK IN THE LOCKS.

About 59 per cent of the concrete for all the locks is in place, the amount at the close of the work on July 29 being 2,510,394 cubic yards, out of a total of approximately 4,284,400. A total of 34,123½ cubic yards of concrete was laid in the locks during the week ending July 29.

GATUN LOCKS.

Over 71 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of the work on July 29 being 1,496,086½ cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each working day for the week ending July 29, and of the total, follows; and a similar statement for the work in the Spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
July 24	2,222	38.06	8	674	7.34	2	248	3,144
July 25	1,696	28.05	6	700	8.50	2	174	2,570
July 26	1,812	28.50	8	808	9.40	2	246	2,866
July 27	1,986	33.20	7	706	8.20	2	220	2,912
July 28	1,540	26.11	8	650	8.10	2	204	2,394
July 29	1,868	32.47	6	474	5.40	2	216	2,558
*Portable mixers				369½				369½
Total	11,124	187.19	7.17	4,381½	48,14	2	1,308	16,813½
Previously reported								1,479,273
Grand total								1,496,086½

*The 369½ yards shown for the portable mixers are reinforced concrete, and were placed on the following days: July 24th, 65½; July 25th, 77; July 26th, 74½; July 27th, 80; July 28th, 59½; July 29th, 13.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is over 82 per cent completed, 693,804 cubic yards, out of a total of 837,400, having been placed at the close of work on July 29. The record for each of the six 8-hour working days of last week, follows:

DATE.	AUXILIARY PLANT.						Large stone.	Total.
	2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cubic Yds*
July 24	710	20.00	3	70	6.00	2	3	783
July 25	746	20.50	3	160	10.25	2	7	913
July 26	628	18.75	3	112	9.00	2		740
July 27	782	20.00	3	100	7.00	1	12	894
July 28	884	22.50	3	131	7.58	2		1,015
July 29	486	17.00	3	126	8.25	2	4	616
Total	4,236	118.75	3	699	48.08	1.67	26	4,961
Previously reported							4,415	688,843
Grand total							4,441	693,804

MIRAFLORES LOCKS.

Over 23 per cent of the concrete for the system of two twin locks at Miraflores was in place on July 29, the total amount on that date being 320,504 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT.							Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
July 24	1,050	20.33	4	195	22.00	3	552	12.92	2		1,797
July 25	1,500	27.83	5	210	13.00	2	622	14.50	2		2,332
July 26	1,266	21.50	5	107	9.00	2	578	12.50	2		1,951
July 27	1,050	20.33	4	149	14 50	2	568	13.00	2		1,767
July 28	1,316	24.50	5	113	11.50	5	580	13.00	2		2,009
July 29	1,760	27.83	5	169	15.45	2	564	12.00	2		2,493
Total	7,942	142.32	4.33	943	85.45	2.17	3,464	77.92	2		12,349
Previously reported										3,693	308,155
Grand total										3,693	320,504

SOCIAL LIFE OF THE ZONE.

Women's Organizations, Clubs, Auxiliaries, and Church Societies.

Organizations, composed of women in the Canal Zone, date from the arrival, in larger numbers, of the wives and families of men employed in the construction of the Canal, that is, from 1906. For the two years of American occupation preceding that time, health conditions had been unsatisfactory, commissaries were not running smoothly, and school facilities were not good, influences which made it undesirable for men to bring their families to the Isthmus. With the construction of family quarters, however, and the improvement in living conditions, the number of families increased rapidly.

On October 4, 1905, the Isthmian Canal Commission authorized the appointment of ministers to be attached to the line sick camps, and to the general hospitals at Colon and Ancon. This did not imply organized church work, but as the family life became established, it was found desirable to form organizations for the purpose of providing regular church services. The Commission authorized the construction or remodeling of suitable buildings for purposes of public worship, Sunday schools were started, young people's leagues were organized, and the need of church work was at once evident. Outside of this work, however, there were no formal organizations among women until March, 1906, when Alfaretta Council, No. 1, Degree of Pocahontas, was established at Culebra.

A general club movement among the women was started in October, 1907, for the purpose of uniting women in social, philanthropic, and educational effort, and to bring them into touch with club movements in the States by affiliation with the General Federation of Women's Clubs. This was done through a central organization, under the title of the Canal Zone Federation of Women's Clubs. For the first year the federation, as well as the separate club of which it was composed, followed closely in organization and effort, the lines of the General Federation, by its division into departments corresponding in nature to those of the parent organization. Matters of civic, educational, and philanthropic interest were dealt with; household economics were studied, art lectures were given, and regular lines of work were taken up by the departments. Reaching now, the period when the end of the Canal work is in sight, it has been found desirable to alter somewhat the character of the organization, to hold the meetings less frequently, and to merge the department work into a common effort, the general direction of which is toward home and educational interests. One object of the federation has been to develop its members for organized club work wherever they may be, and to fit them to take their places in any of the movements by women in the United States.

While the influence of the federation extends throughout the Canal Zone, meetings being held in the different villages, each of the separate clubs forms a center of local interest.

Among the secular clubs, there is a branch of the International Sunshine Society at Gatun. The interests of this society, which has been organized three years, center around work for blind babies in New York. Nearly six hundred dollars have been forwarded to international headquarters for the furnishing of a dormitory, known as the Gatun dormitory, in the Arthur Home at Summit, New Jersey. Donations of clothing for special cases have also been made by the society. The funds are maintained by means of "Sunshine teas," by sales of fancy articles, and by entertainments.

In connection with secret orders and friendly societies, women's auxiliaries have been organized, beginning in 1906 with Alfaretta Council, No. 1, Degree of Pocahontas (Improved Order of Red Men,) at Culebra, followed in 1908, by Osceola Council, No. 2, at Cristobal. Other auxiliaries are the Daughters of Rebekah, No. 1 (Independent Order of Odd Fellows,) at Gorgona; the Pythian Sisters, and the Grand International Auxiliary to the Brotherhood of Locomotive Engineers, both with headquarters at Las Cascadas. These societies are composed of women from various points in the Canal Zone. They are organized under charters granted by the superior lodges in the United States, and all the work pertaining to such societies is carried on. The auxiliaries, as Canal Zone organizations, will probably cease to exist with the return of the majority of their members to their homes in the States.

Of more recent date are organizations which have developed in connection with church work. There is a branch of the Women's Foreign Missionary Society of the Methodist Episcopal Church, with headquarters at Panama, and members from Culebra, Paraiso, Pedro Miguel, Corozal, Balboa, and Ancon. The semimonthly meetings are devoted to the study of missionary text books. For the purpose of maintaining the treasury, "teas," and other entertainments are held from time to time. The society maintains two scholarships in the Methodist college in Panama. The greater portion of the missionary funds are applied to work on the Isthmus. A ladies' aid society is also active in connection with this church.

There are women's guilds and altar societies in connection with the Protestant Episcopal church in Ancon, Culebra, Empire, and Colon, and with the Roman Catholic churches in Culebra, Empire, Gorgona, Las Cascadas, Gatun, and Colon. As their name implies, these are strictly church organizations, the members having charge of the things pertaining to the altar, and the vestments of clergy and choir. Occasional church receptions are given under the guilds, and matters pertaining to the Sunday schools are referred to the members who, in general, are teachers in the schools.

In connection with the growth of undenominational work in the Canal Zone, an organization was formed at Culebra in 1908 under the title of "The Union Christian League of Culebra." Its object was to provide for religious services that would be agreeable to all people, irrespective of sect. Under this organization, a minister was called to the local pastorate, being at the same time, appointed Commission chaplain to the Culebra hospital. In addition to his pay as Commission chaplain, the minister received a stipend from the Christian League for maintaining regular services at the chapel. The league has an executive council composed of fifteen members, men and women. Women are on the committees, and share the work of the organization equally with the men. Similar leagues have been formed at Empire, Gatun, and Cristobal. These organizations are conducted on the lines of the Union League, but are independent, each working within the limit of its own village. They are prominent in social, as well as the church life of the villages, provide the undenominational services conducted at the chapels, and women, as well as men, are active in the executive council of each. In Empire, Gatun, and Cristobal, there are ladies' auxiliaries in connection with the Christian leagues. These societies study missionary work, hold entertainments for the purpose of raising money for chapel furnishings and improvements, are active in all social life connected with the churches, and have oversight of such charity work as comes within the scope of the organizations.

Besides these organizations, there are, among the women, a number of private card clubs, and one "Current events" club at Cristobal, with six members, who meet weekly.

It is estimated that in the larger villages, Ancon, Pedro Miguel, Paraiso, Empire, Las Cascadas, Gorgona, Gatun, and Cristobal, there is an average of two meetings of women's organizations weekly. Nearly one-half of the entire number of women in the Canal Zone are affiliated with some organization, the majority being engaged in church or religious work.

Sunshine Society Meeting.

At its meeting on Wednesday July 26, the Gatun Sunshine Society held a "bag competition," a large number of bags, made by the members, being placed on exhibit. Prizes were awarded to the makers of the most original, the most attractive, and the most useful bags. A sale of the "Sunshine bags" will be held shortly. At the meeting on the last Wednesday in August, there will be an exhibit of aprons.

Sunday School Picnic.

The annual picnic of St. Luke's Sunday school will be held on Friday, August 11, at Taboguilla Island. The school will assemble at the chapel in the hospital grounds at 8 a. m., whence brakes will take them to the wharf at Balboa. The steamer *Sanidad* will be at their disposal for the day. Those attending are asked to bring basket lunches. All members of the congregation, who desire to do so, are cordially invited to attend.

The July number of *The American Red Cross Bulletin* contains a report by the chairman of the Canal Zone chapter, Lieutenant-Colonel C. A. Devol, on the Colon fire relief work. It is accompanied by three half-tone engravings of pictures taken soon after the fire.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Cristobal, C. Z., on Sunday, August 6, at 4.30 p. m. The program follows:

1.	March—*Love of Liberty*	Scouton
2.	Selection—*The Girl of My Dreams*	Hoschna
3.	Cornet Solo—*Columbia* Mr. Bernell.	Rollinson
4.	Waltz—*Gaite*	Waldteufel
5.	Medley Overture—*Headlights*	Schulz
6.	Sextet from Lucia	Donizett
7.	Request Number—*Madame Sherry*	Hoschna
8.	Characteristic—*Muttering Fritz*	Losey
9.	Nautical Fantasia	Tobani
10.	Popular Number—*On, Wisconsin*	Purdy

OLIVER KIMBALL, *Acting Musical Director.*

The next concert will be given at the Hotel Tivoli, on Sunday, August 13.

ISLANDS IN PANAMA BAY.

Pacific Mail S. S Co. Transfers its Interest in Naos, Perico, Flamenco, and Culebra.

The Pacific Mail Steamship Company has formally accepted the awards made by the joint commission in 1907, for all of its rights in, and improvements on, the islands of Naos, Flamenco, Perico, and Culebra, in Panama Bay, and they were taken over by the Isthmian Canal Commission, as of July 1, 1911.

Two awards were made by the joint commission, one on May 9, 1907, which allowed the steamship company the sum of $20,000 for all of the improvements on Naos Island, as of that date, and another on May 11, 1907, which granted the company the sum of $24,000 for its half-interest in the four islands, the remaining half being in possession of the Panama Railroad Company.

The awards have been pending until recently, when they were accepted by the steamship company. In addition to the sums mentioned, interest on them at the rate of six per cent per annum was granted the company to cover the periods from the dates of the awards to July 1, 1911. The steamship company has been given 90 days from July 1, in which to remove all its personal effects from the islands.

The only other improvements on Naos Island consist of a house belonging to the Panama Railroad Company, leased by it on June 1, 1908 to the Canal Commission for a period of 15 years, for use of the quarantine station; and a maregraph station erected by the Pacific Division. There is no personal property on Perico or Flamenco Islands, except the shacks of two or three squatters. Culebra Island, the fourth of the group, has been occupied for quarantine purposes since 1908. The records of the Panama Railroad Company show that it has no interest in the improvements on the islands, outside of that above mentioned.

On November 18, 1852, after various correspondence between William C. Young, then president of the Panama Railroad Company, and William H. Aspinwall, then president of the Pacific Mail Steamship Company, Mr. Aspinwall was authorized to purchase one or more islands in the Bay of Panama for the joint account of the railroad company and the steamship company. It was during the fall and up to the spring of 1853, that these four island were purchased by Mr. Flint, and Mr. Forbes, his successor, agents for the steamship company. The total cost of the islands was $30,000, of which one-half was paid by the Panama Railroad Company in August, 1854. The records show that the various improvements made on the islands up to the year 1861 were paid for by the Pacific Mail Steamship Company, and on August 9, 1861, the steamship company executed a deed in favor of the railroad company for one equal undivided half part of the four islands, as per document registered under folio No. 111 of the record book of the General Administration of the Treasury, Panama, dated October 24, 1861.

According to Article 4 of contract dated July 5, 1867, made between the United States of Colombia, and the Panama Railroad Company, the railroad company bound itself to extend the railroad on the Pacific side of the Isthmus to one of the four islands, or some other place where a permanent depth of water might exist. In 1880, a new contract was formed by which the railroad company agreed to pay the United States of Colombia the sum of $10,000 a year for a period of 30 years as a penalty for not extending the road to the islands. In other words, the railroad company agreed to pay $300,000 for the abrogation of this contract during 30 years, at the expiration of which period, the original contract was to be again in force. The penalty of $10,000 a year was paid for 20 years, or until 1900. In that year, Señor José Agustin Arango, acting as special representative of the railroad company, effected a new settlement with the Colombian Government, in accordance with which, the original contract was abrogated for all time in consideration of the payment by the railroad company of an additional sum of $200,000, making the total amount which the company has paid for the noncompletion of the railroad to the islands $400,000. A copy of this exemption granted by the Government to the railroad company, and also acknowledging the payment of the $200,000 gold, is registered in Panama under document No. 246, dated November 6, 1892.

Funeral Service.

A short funeral service was held at the mortuary, Ancon, on Sunday morning, by the members of garrison No. 106 of the Army and Navy Union, over the remains of the late H. H. Penny. The services were conducted by the Rev. A. A. Nellis, pastor of the Empire chapel, at which church Mr. Penny was a regular attendant. He was a member of the G. A. R. and the A. and N. U. The body was shipped on the *Panama*, on July 31, for interment in Brooklyn, N. Y.

Preliminary Injunction Denied.

The application for a preliminary injunction, restraining the Panama Railroad Company from excavating earth and rock from a hill near Mount Hope, made by Horatio L. Stevenson, was denied by Justice Brown, Jr., in the Circuit Court of the Third Judicial Circuit at Cristobal. Two weeks were given plaintiff's attorney in which to file a reply to defendant's answer.

Error in Time Table.

The Panama railroad time table published in the issue of THE CANAL RECORD of July 26 was in error in that it showed train No. 74, which leaves Panama on Saturday night, and makes all but three miles of its journey on Sunday morning, as running on "Sunday only." The corrected time table is published below.

PANAMA RAILROAD COMPANY.

PASSENGER TRAIN TIME TABLE No. 10—IN EFFECT JULY 24, 1911.

SOUTHWARD.										Miles from Colon.	STATIONS.	NORTHWARD.										
SUN. ONLY.*	SAT. ONLY	SUNDAY ONLY.					DAILY EXCEPT SUNDAY.					DAILY EXCEPT SUNDAY				SUNDAY ONLY.						SUNDAY
73	71	29	27	25	23	21	7	5	3			2	4	6	8	20	2	24	26	28	30	74
A. M.	P. M.	P. M.	P. M.	P. M.	A. M.	A. M.	P. M.	A. M.	A. M.		Leave. Arr.	A. M.	P. M.	P. M.	P. M.	A. M.	P. M.	P. M.	P. M.	P. M.	P. M.	A. M.
12.30	6.00	7.00	4.00	1.00	10.00	6.45	4.35	10.30	5.20	0.00	†Colon..........	8.50	1.00	3.45	7.45	9.00	12.15	3.15	6.15	9.15	11.55	2.05
12.35	s 6.05	s 7.05	s 4.05	s 1.05	s 10.05	s 6.50	f 4.40	f 10.33	f 5.25	1.77	†Mt. Hope ...	s 8.47	f 12.57	f 3.43	f 7.42	s 8.57	s 12.12	s 3.12	s 6.12	s 9.12	s 11.52	s 2.03
12.45	6.10	f 7.10	4.10	1.10	f 10.10	6.55	4.45	10.38	s 5.31	4:37	†Mindi	s 8.41	f 12.51	f 3.38	f 7.36	f 8.51	12.06	3 06	6.06	9.06	f 11.46	1.57
	6.15	f 7.16	f 4.16	f 1.16	f 10.16	f 7.01	f 4.50	f 10.43	f 5.36	5.94	New Gatun...	s 8.35	f 12.45	f 3.32	f 7.30	s 8.46	f 12.01	f 3.01	f 6.01	f 9.01	f 11.41	1.52
s 12.58	s 6 18	s 7.20	s 4.20	s 1.20	s 10.20	s 7.05	s 4.53	s 10.47	s 5.41	6.79	†Gatun.........	s 8.31	s 12.41	s 3.29	s 7.26	s 8.41	P. M. s 11.56	s 2.56	s 5.56	s 8.56	s 11.37	s 1.50
1.23	f 6.41	s 7.44	f 4.44	f 1.44	f 10.44	f 7.29	f 5.16	f 11.11	f 6.05	15.26	†Bohio	s 8 06	f 12.16	f 3.04	s 7.01	s 8.16	s 11.31	s 2.31	s 5.31	s 8.31	f 11.16	f 1.25
1.32	f 6 47	s 7.51	s 4 51	s 1.51	s 10.51	f 7.36	f 5.22	f 11.18	f 6.12	18 51	Frijoles.......	s 7.59	s 12.09	f 2.57	s 6.54	s 8.09	s 11.24	s 2.24	s 5.24	s 8.24	s 11.10	f 1.18
s 1.42	s 6.53	s 7.58	s 4.58	s 1 58	s 10.58	s 7.43	s 5 28	s 11.25	s 6.19	21.37	†Tabernilla....	s 7.52	s 12.02	s 2.50	s 6.48	s 8.03	s 11.18	s 2.18	s 5.18	s 8.18	s 11.04	s 1.11
1.49	s 6.57	s 8.03	s 5.03	s 2.03	s 11.03	s 7.48	s 5.32	s 11.29	s 6.23	23.30	†San Pablo....	s 7.46	P. M. s 11.56	s 2.44	s 6.41	s 7.58	s 11.13	s 2.13	s 5.13	s 8.13	s 10.59	s 1.05
1.55	f 7.03	f 8.09	f 5.09	f 2.09	f 11.09	f 7.54	f 5.38	f 11.35	f 6.30	25.74	†Mamei	f 7.40	f 11.50	f 2.38	f 6.35	f 7.52	f 11.07	f 2.07	f 5.07	f 8.07	f 10.53	f 12.59
s 2.08	s 7.11	s 8.15	s 5.15	s 2.15	s 11.15	s 8.00	s 5.46	s 11.44	s 6 38	28.27	†Gorgona	s 7.32	s 11.42	s 2.31	s 6.27	s 7.46	s 11.01	s 2.01	s 5.01	s 8.01	s 10.47	s 12.53
s 2.15	s 7.16	s 8.20	s 5.20	s 2.20	s 11.20	s 8.05	s 5.51	s 11.49	s 6 43	29.68	†Matachin	s 7.26	s 11.36	s 2.25	s 6.21	s 7.40	s 10.55	s 1.55	s 4.55	s 7.55	s 10.41	s 12.47
s 2.21	s 7.20	s 8.25	s 5.25	s 2.25	s 11.25	s 8 10	s 5.55	s 11.55	s 6.48	31.01	†Bas Obispo...	s 7.22	s 11.32	s 2.21	s 6.17	s 7.35	s 10.50	s 1.50	s 4.50	s 7.50	f 10.36	s 12.42
s 2.35	s 7.26	s 8.31	s 5.31	s 2.31	s 11.31	s 8.16	s 6.01	P. M. s 12.02	s 6.55	32.62	Las Cascadas.	s 7.16	s 11.26	s 2.15	s 6.11	s 7.29	s 10.44	s 1.44	s 4.44	s 7.44	s 10.30	s 12.37
s 2.45	s 7.32	s 8.37	s 5.37	s 2.37	s 11.37	s 8.22	s 6.07	s 12.09	s 7.02	34.91	†Empire.......	s 7.11	s 11.21	s 2.10	s 6.06	s 7.23	s 10.38	s 1.38	s 4.38	s 7.38	s 10.24	s 12.31
s 2.53	s 7.38	s 8.43	s 5.43	s 2.43	s 11.43	s 8.28	s 6.13	s 12.15	s 7.08	35.90	†Culebra	s 7.05	s 11.15	s 2.04	s 6.00	s 7.17	s 10.32	s 1.32	s 4.32	s 7.32	s 10.16	s 12.25
s 3.03	s 7.48	f 8.52	f 5.52	f 2.52	f 11.52	f 8.37	6.23	12.25	7.18	39.77	†Paraiso Jct...	6.52	11.02	1.51	5.47	f 7.06	f 10.21	f 1.21	f 4.21	f 7.21	f 10.04	f 12.12
s 3.12	s 7.50	s 8.54	s 5.54	s 2.54	s 11.54	s 8.39	s 6.25	s 12 27	s 7.20	40.15	†Pedro Miguel	s 6.50	s 11.00	s 1.50	s 5.45	s 7.04	s 10.19	s 1.19	s 4.19	s 7.19	s 10.01	s 12.10
	s 7.56	s 8.59	s 5.59	s 2.59	s 11.59	s 8.44	s 6.31	s 12.32	s 7.26	41.66	Miraflores....	s 6.44	s 10.54	s 1.44	s 5.39	s 6.59	s 10.14	s 1.14	s 4.14	s 7.14	s 9.55	s 12.04
s 3.25	s 8.04	s 9.07	s 6.07	s 3.07	P. M. s 12.07	s 8.52	s 6.39	s 12.39	s 7.33	44.16	†Corozal.......	s 6.37	s 10.47	s 1.37	s 5.32	s 6.52	s 10.07	s 1.07	s 4.07	s 7.07	s 9.48	A. M. s †11.57
	f 8.06	f 9.09	f 6.09	f 3.09	f 12.09	f 8.54	f 6.41	f 12.41	f 7.35	44.84	Camp Diablo.	s 6.35	f 10 45	f 1.35	f 5.30	f 6.50	f 10.05	f 1.05	f 4.05	f 7.05	f 9.45	s †11.55
3.30	8.10	9.15	6.15	3.15	12.15	9.00	6.45	12.45	7.40	47.07	†Panama......	6.30	10.40	1.30	5.25	6.45	10.00	1.00	4.00	7.00	9.40	†11.50
A. M.	P. M.	P. M.	P. M.	P. M.	P. M.	A. M.	P. M.	P. M.	A. M.		Arr. Leave.	A. M.	A. M.	P. M.	P. M.	A. M.	A. M.	P. M.	P. M.	P. M.	P. M.	P. M.
73	71	29	27	25	23	21	7	5	3		†Tel. station. f Flag station. s stop.	2	4	6	8	20	22	24	26	28	30	74

* No. 73 is a mixed train, carrying one or two first class coaches.
† Saturday night.

CANAL ZONE LANDS.

Status of Public and Panama Railroad Lands.

The policy of the Government with regard to the leasing of public lands in the Canal Zone, has not yet been determined, except so far as it is indicated by the law of February 29, 1909, quoted below. The determination depends on collateral questions, such as a permanent form of government for the Canal Zone, and whether the whole of the lands in the Zone shall be purchased and held as a Government reservation. A bill to this effect is now pending in the Congress. Meanwhile, a cadastral survey of Government and Panama railroad lands is nearing completion, a land office for both classes of lands has been established in the Law Department, with headquarters at Ancon, and it will soon be possible to carry out the provisions of the land law above mentioned, which reads, as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the President is hereby authorized to grant leases of the public lands in the Canal Zone, Isthmus of Panama, for such period, not exceeding twenty-five years, and upon such terms and conditions as he may deem advisable. No lease, however, shall be granted for a tract of land in excess of fifty hectares, nor to any person who shall not have first established by affidavit, and by such other proof as may be required that such person is the head of a family or over the age of twenty-one years, and that the application for a lease is made in a good faith for the purposes of actual settlement and cultivation, and not for the benefit of any other person whatsoever, and that such person will faithfully comply with all the requirements of law as to settlement, residence, and cultivation. In granting such leases, preference shall be accorded to actual occupants of lands in good faith.

SEC. 2. That no portion of the lands of the United States within the Canal Zone shall be leased hereunder unless it shall first be made to appear, by a statement or plat filed by the Isthmian Canal Commission with the Collector of Revenues for the Canal Zone, that it is not contemplated to use such lands in the work of Canal construction, or to set the same aside as a town site; and all leases shall be made subject to the provision, that if, at any time, it shall become necessary, notwithstanding, for the United States to occupy or use any portion of the leased lands, it shall have the right to do so without further compensation to the lessee, than for the reasonable value of the necessary improvements made upon said tracts by the lessee, the same to be determined by the courts of the Canal Zone.

SEC. 5. That all leases of lands hereunder shall reserve to the United States all mineral, oil, and gas rights in the lands leased.

SEC. 4. That the President may, in his discretion, require a land survey to be made of the Canal Zone.

SEC. 5. That the powers conferred upon the President under this Act may be exercised by him through the Isthmian Canal Commission, or in such other manner as he may designate.

Title to over 80 per cent of the lands in the Canal Zone is in the United States Government, either directly, or by the Panama railroad, the division being, as follows:

	Hectares*	Sq. Miles.
U. S. Government—		
Isthmian Canal Commission—		
From French Canal Company	13,518	102
By purchase since 1904......	12,865	
Vacant public lands...........	46,218	178
Panama Railroad Company....	21,440	83
Total Government............	94,041	363
Private..........................	18,838	73
Grand total....................	112,879	436

From this statement it will be seen that three classes of lands are recognized—(1) public, (2) Panama railroad, (3) private.

THE PUBLIC LANDS.

The socalled public lands were acquired by the United States by purchase. The lease of the Canal Zone from Panama brought with it a title to the common lands, within the Zone, granted to the city of Panama by Charles V in 1521, amounting to about 46,218 hectares. Originally, they included all the lands within the confines of the Canal Zone, but various titles by Government grant and prescription, have been recognized. The purchase of the property and rights of the New Panama Canal Company of France brought with it 13,518 hectares. By the concession of March 20, 1878, the French company acquired the title to a 200-meter wide belt of land on either side of the Canal, land for the Canal, ports, and accessory works, ceded in the case of public lands, and acquired by condemnation in the case of privately owned lands. Since the American occupation in 1904, there have been purchased, by agreement or expropriation, from private holders, 12,865 hectares.

At present, the status of the public lands is, that about 103 square miles will be covered by the water of the Canal, and Gatun and Miraflores lakes, while other portions are reserved for Canal construction and military purposes, and as townsites. Land is actually being leased for farming, on revocable licenses only, because it is not known at present exactly what tracts will be needed for the Canal and associated work, and for new townsites. Maps have recently been made, however, by the various divisions and departments, showing what lands will be required, and when the data on these are compiled, and the land survey mentioned above completed, the Commission will be in position to put into effect the provisions of the law of February 27, 1909.

It has been the custom in Panama for any one who wished to cultivate land, to clear it and begin farming, without regard to the ownership of the land so occupied. This cultivation is of a very primitive kind, consisting chiefly of scratching the ground with a machete, or stick, and planting corn, yams, cassava, plantains, bananas, or other fruits and vegetables. Recently, it has increased to an appreciable extent, and not a few of the Canal laborers, largely negroes, have left the works for this easy life in the bush. Both from the standpoint of the labor force, and the future leasing of the lands in legal and orderly manner, this squatting is undesirable. In order, therefore, that the squatters may be given due notice that this custom will not be tolerated in the future, the following notice has been posted in parts of the Canal Zone where they are most likely to see it:

NOTICE.

Every person who wilfully commits any trespass by cutting down, destroying, or injuring any kind of wood or timber standing or growing upon the lands of another, or upon public lands, is guilty of a misdemeanor, and will be prosecuted accordingly.

Permission to occupy public lands, or lands of the Panama Railroad Company, must be obtained from the Land Agent, Ancon, Canal Zone.

The prohibition against cutting down wood or timber is to prevent the clearing necessary before the lands can be cultivated.

An article was published in THE CANAL RECORD of February 5, 1908, giving the status of the public lands up to that time. When the United States Government took possession of the Canal Zone in May, 1904, there were leases in effect from the former régime. The Secretary of War, to whom the President had confided the direction of Canal affairs, directed that leases be made, both of the old common lands, and of lands acquired by the French, under the provisions of the law of July 28, 1892, authorizing the Secretary of War to make revocable leases of such property under his control as may not, for the time, be required for public use, for a term of not more than five years, providing no other provision exists for their lease. On January 1, 1905, the issue of such leases was turned over to the Collector of Revenues, in whom that power remained until the establishment of a land office by the Executive Order of January 19, 1911.

On January 1, 1906, the rent for agricultural lands was fixed at $3 a year per hectare; the rate charged for building lots in towns varies from 5 to 30 cents per square meter, according to the situation. On June 30, 1906, there were in effect 121 leases for farm lands, and, since that time, the record at the close of each fiscal year has been, as follows:

YEAR.	LEASES.				Revenue. Dollars.
	Farming.		Building lots	B'ld ings	
	Number.	Hectares.	Number.	Number	
1907..........	83	344	479	....	7,974.78
1908..........	194	590	878	9	17,436.76
1909..........	482	1,020¾	1,615	6	26,969.88
1910..........	884	1,545	1,892	7	27,282.29
1911..........	1,261	1,430	984	8	23,469.22

Leases of land in the Gatun Lake and Miraflores Lake beds have been cancelled, as also leases of land at Balboa. Leases of lands in townsites are now made under authority of the Executive Order of June 28, 1911, and are in the form of revocable licenses. Leases for agricultural lands are made partly in accordance with the custom established in 1905, when it was erroneously thought that the law of July 28, 1892, applied to the Canal Zone, and partly under the provisions of the Executive Order of March 13, 1907, authorizing the execution of leases under the direction of the Collector of Revenues.

PANAMA RAILROAD LANDS.

Panama railroad lands have been acquired by grant from the Colombian Government, and by purchase, at various times, since 1851. Most of the 21,440 hectares is in agricultural land, which, at present, is not under lease, because it has not been known what tracts will be required for townsites and Canal purposes. The most valuable holdings are those in the cities of Colon and Panama, while those in townsites along the railroad also have a considerable value at the present time. Only two "cultivation leases," as they are called, are now held, and they are not for agricultural purposes, one being the right to collect rubber from the trees at Toro Point, and the other to use Mindi Island, opposite Mount Hope, for hog raising.

Colon was reclaimed from swamp by the Panama Railroad Company, and the additions made by filling since 1904 are largely paid for by the railroad, because it is the principal beneficiary. All the water front is owned by the railroad, except one lot, and a dock by the Royal Mail Steamship Company, and one dock by the Pacific Mail Steamship Company. In the remainder of the city, the railroad owns all but 104 lots, and title for these is in the Panama Government. In the old city, 510 lots, and in the newly improved section, 346 lots, are owned by the company, which has 491 leases in the old section and 215 in the new section, the latter having been made to people holding options and to a few bidders. Bids for the balance will be opened this week. Leases for lots in towns are made for 15 years for wooden buildings, and 25 years for masonry buildings, and these leases can be revoked only upon payment for the improvements.

In the city of Panama, the railroad has issued 338 leases, 18 of which are in the railroad yards in that city, and on the water front, leases for two docks and one bulkhead. At Balboa, two buildings are leased to steamship companies, and the railroad company's half interest in Naos Island, the completed purchase of which is mentioned elsewhere in this issue, has been leased to the Isthmian Canal Commission. Between Colon and Panama, the following number of leases for buildings are in effect: Folks River, 64; New Gatun, 156; New Frijoles, 19; Empire district, 355; Culebra district, 286; Corozal, 2.

PERSONAL.

Lieut-Col. D. D. Gaillard is a passenger on the *Colon*, due to arrive August 6.

Mr. Joseph Bucklin Bishop, with his wife and daughter, is a passenger on the *Cristobal*, due to arrive on the Isthmus on August 3.

Major Robert E. Noble, accompanied by Mrs. Noble, will leave on August 3 for Porto Rico, where he has been detailed for a period of six months to start mosquito destruction work. He will be assisted by Mr. E. W. Mitchell, one of the Commission's sanitary inspectors.

Ban on Deck Passengers and Stowaways from Trinidad.

The local quarantine authorities have served notice on the steamship companies, whose vessels stop at Trinidad, that no more deck passengers from that island will be allowed to land at Colon, without first having completed the full six days at sea, as required by the regulations in all cases where stops are made at infected ports. There are three steamship lines that make both Port of Spain, Trinidad, and Colon, ports of call, but only one of them brings many deck passengers from there to the Isthmus. As the enforcement of the regulations would cause a delay of at least two days in the steamers' leaving time at Colon, deck passengers from that island are now refused passage.

Owing to the recent trouble with stowaways, the steamship officials are exercising the utmost vigilance in getting rid of them before reaching Colon. The officers of the Royal Mail Steam Packet Company's vessel, the *Thames* which arrived at Colon on July 23, made a thorough search of the vessel before leaving Trinidad, and discovered 65 stowaways hidden away, the same number that was brought to Colon on a previous steamer. They were promptly put on shore. Another search was made at Savanilla, resulting in the discovery of two more and still another hunt was made at Cartagena, where one was found. All were landed, and when the boat entered Colon Harbor, it was entirely free of them. As a warning to others, the members of the crew took some of the stowaways and painted their heads and faces with red lead before landing them.

The *Thames*, on its last trip, brought 145 contract laborers for the Canal work, recruited principally at Barbados.

The tug *Reliance* is in the Cristobal dry dock undergoing an overhauling.

CUSTOMS INFORMATION.

Summary of Regulations Affecting Americans Returning Home with Personal Property.

Persons who have been keeping house on the Isthmus and wish to return to the United States for good, can fill out a form before the Collector of Customs, Administration building, Ancon, or before the Deputy Collector of Customs, building No. 1, Cristobal, setting forth the character of the goods, the fact that they are of American manufacture, and have not been changed in value or altered in condition, and these goods will be admitted to the United States free of duty.

A similar form may be made out for goods purchased abroad of foreign manufacture, such as household goods, books, etc., if they have actually been used in housekeeping for a period in excess of one year, and such goods will then be admitted free of duty.

A summary of the principal customs regulations applying to Americans returning to the United States, is appended, herewith.

TOM M. COOKE,
Collector of Revenues.

ANCON, C. Z., August 1, 1911.

Paragraph 709, appearing in the free list of the present tariff act, governing passengers' baggage, reads, as follows:

Wearing apparel, articles of personal adornment, toilet articles, and similar personal effects of persons arriving in the United States; but this exemption shall only include such articles as actually accompany, and are in the use of, and as are necessary and appropriate for the wear and use of such persons, for the immediate purposes of the journey and present comfort and convenience, and shall not be held to apply to merchandise or articles intended for other persons or for sale: *Provided*, That in case of residents of the United States returning from abroad, all wearing apparel and other personal effects taken by them out of the United States to foreign countries, shall be admitted free of duty, without regard to their value, upon their identity being established, under appropriate rules and regulations to be prescribed by the Secretary of the Treasury, but not more than one hundred dollars in value of articles purchased abroad by such residents of the United States shall be admitted free of duty upon their return.

Residents of the United States must declare all articles which have been obtained abroad by purchase or otherwise, whether used or unused, and whether on their persons, in their clothing, or in their baggage. The foreign value of each article, stated in United States money, must also be declared.

Articles taken from the United States and remodeled, repaired, or improved abroad must be declared, and the cost of such remodeling, repairing, or improving, must be separately stated.

The following articles are dutiable: Household effects, including books, pictures, furniture, tableware, table linen, bed linen, and other similar articles, unless used abroad by the owner for a period of a year or more. Goods in the piece. Articles of any nature intended for sale, or for other persons.

The following articles are free if under $100 in value, and if necessary for comfort and convenience for the purposes of the journey, and not for sale nor for other persons: Clothing; toilet articles, such as combs, brushes, soaps, cosmetics, shaving and manicure sets, etc.; personal adornments, jewelry, etc.; similar personal effects, which may include cameras, canes, fishing tackle, glasses (field, opera, marine), golf sticks, guns, musical instruments, parasols, photographs, smokers' articles, steamer rugs and shawls, toys, trunks, valises, etc.; clothing and other personal effects taken out of the United States by the passenger *if not increased in value or improved in condition while abroad*. If increased in value or improved in condition, they are dutiable on the cost of the repairs.

The above lists of articles, which are dutiable and nondutiable, are stated for the assistance of passengers, and are not exhaustive. *All articles are dutiable unless specifically exempted by law.*

Pack in one trunk, if practicable, all dutiable articles.

Receipted bills for foreign purchases should be presented whenever possible.

Use does not exempt from duty wearing apparel or other articles obtained abroad, but such articles will be appraised at their value in the condition as imported, due allowance being made for depreciation through wear and use.

Nonresidents of the United States are entitled to bring in free of duty without regard to the one hundred-dollar exemption, such articles as are in the nature of wearing apparel, articles of personal adornment, toilet articles, and similar personal effects, necessary and appropriate for their wear and use for the purposes of the journey and present comfort and convenience, and which are not intended for other persons or for sale.

Citizens of the United States, or persons who have at any time resided in this country, shall be deemed to be residents of the United States, unless they shall have abandoned their residence in this country and acquired an actual *bona fide* residence in a foreign country.

Such citizens or former residents who desire the privileges granted by law to nonresidents must show to the satisfactoin of the collector's representative on the pier, subject to the collector's approval, that they have given up their residence in the United States and that they have become *bona fide* residents of a foreign country.

The residence of a wife follows that of the husband; and the residence of a minor child follows that of its parents.

Household effects of persons or families from foreign countries will be admitted free of duty only if actually used abroad by them not less than one year, and if not intended for any other person, nor for sale. Such effects should be declared whether the passenger be a resident or a nonresident of the United States.

Articles intended for use in business, or for other persons, theatrical apparel, properties, and sceneries, must be declared by passengers, whether residents or nonresidents.

All cigars and cigarettes must be declared. Each passenger over eighteen years of age may bring in free of duty 50 cigars or 300 cigarettes if for the *bona fide* use of such passenger. Such cigars and cigarettes will be in addition to the articles included within the $100 exemption.

The law provides that every person entering the United States shall make a declaration and entry of his or her personal baggage. The law further requires that the values of articles shall be determined by customs officers, irrespective of the statements of passengers relative thereto.

It will thus be seen that there is no discourtesy in the requirement that both a declaration and an independent appraisal shall be made. Taken together, these requirements place the passenger in the same position as any other importer of merchandise.

Passengers should observe that on the sheet given them there are two forms of declarations; the one printed in black is for residents of the United States; the one in red, for nonresidents.

The exact number of pieces of baggage, including all trunks, valises, boxes, packages, and hand bags of any description accompanying the passenger, must be stated in the declaration.

The senior member of a family present as a passenger, may make declaration for the entire family.

Ladies traveling alone should state that fact in their declarations, in order that an expeditious examination of their baggage may be made.

When the declaration is prepared and signed, the coupon at the bottom of the form must be detached and retained by the passenger, and the form given to the officer of the ship designated to receive the same. A declaration spoiled in its preparation must not be destroyed, but turned over to the purser, who will furnish a new blank to the passenger.

After all the baggage and effects of the passenger have been landed upon the pier, the coupon which has been retained by the passenger must be presented at the inspector's desk, whereupon an inspector will be detailed to examine the baggage. Passengers must acknowledge in person, on the pier, their signature to their declarations.

Examination of any baggage may be postponed if the passenger requests the officer taking his declaration to have it sent to the appraiser's store.

Passengers must not deduct the $100 exemption in making out their declarations. Such deductions will be made by customs officers on the pier.

Passengers dissatisfied with values placed upon dutiable articles by the customs officers on the pier may demand a reexamination, but application therefor should be immediately made to the officers there in charge. If for any reason this course is impracticable, the packages containing the articles should be left in customs custody and application for reappraisement made to the collector of customs, in writing, within ten days after the original appraisement. *No request for reappraisement can be entertained after the articles have been removed from customs custody.*

PENALTY FOR NOT DECLARING ARTICLES OBTAINED ABROAD.

Under Sections 2802 and 3082 of the Revised Statutes of the United States, articles obtained abroad and not declared are subject to seizure, and the passenger is liable to criminal prosecution.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

WIRELESS CHESS GAME.

The following is a complete record of moves made in the wireless chess game between Porto Bello and Culebra:

PORTO BELLO.	CULEBRA.
White.	Black.
1—P K4	P K 4.
2—K Kt—B3	QKt B3.
3—B B 4	B—B4.
4—P QB3	Kt—B3.
5—P Q4	P X P.
6—P X P	B—Kt5 check.
7—B Q2	B X B check.
8—QKt X B	P—Q4.
9—P X P	KKt X P.
10—QKt 3	QKt—K2.
11—O O	OO .
12—KR—KSq	P—QB3.
13—P—QR4	Q—B2..
14—Kt—K4	P—KR3
15—QR—QBSq	Kt—QKt3.
16—B X P check	R X B
17—Kt—K5	KKt—Q4.
18—Kt X R	K X Kt.
19—Kt—B3	B—K3.
20—R—K5	Kt—B5.
21—Q B 2	Q—Q3.
22—Q—K4	QKt—Kt3.
23—R—KSq	R—KSq.
24—R—KB5 check	K—KtSq.
25—R—K5	Kt X R.
26—Q X QKt	Q X Q.
27—P X Q	Kt—Q6.
28—R—K2	B—B2.
29—P—KKt3	Kt X KP.
30—P—KB4	Kt—B6 check.
31—K—Kt2	R X R check.
White resigns, because if	
32—Kt X R	Kt—K8 check.
33—K moves	Kt—Q6

with the loss of another pawn.

COROZAL.

A reception was given on Wednesday evening, July 26, to Mr. and Mrs. Geo. R. D. Kramer, Jr., at which a program of songs, readings, piano solos, a comedy sketch, and addresses was carried out.

CULEBRA.

The high duckpin scores for last week are, as follows: Palmer, 104, 112, 101; Fox, 100.

EMPIRE.

The following high scores were rolled during the week: Pinney, 202; Gustavson, 222; Kosier, 219; Spinks, 200, 203, 202; Goolsby, 201; Coombs, 206; Parkis, 231, 221, 200; Peterson, 203, 220; Pearson, 203; Huson, 226. Duckpins—Payne, 106; Grund, 106, 110; Davis, 103; Graves, 100; Dakin, 109.

The subject for discussion at the meeting of the literary and debating society on Friday evening will be, "Government ownership of railroads." The leader will be Dr. Valelly.

There was a large attendance at the second "open house" held on Saturday evening, July 29. Music was furnished by Reinhold's orchestra of Gorgona. A basketball game was played between two local teams, and there was a local bowling tournament. Refreshments were served in the lobby. The next in this series of entertainments will be on August 12.

There will be a sacred concert under the auspices of the musical and dramatic society on Sunday evening, August 6. There will be solo numbers, choruses from oratorios, and other vocal and instrumental selections.

In the local bowling tournament, those who average 500, or better, are:

	Won.	Lost	P.C.
Johnson	8	1	.888
Gorham	17	3	.878
Anderson	10	3	769
Sullivan	9	4	.692
Spinks	9	5	.643
Kosier	10	6	.625
Davis	3	2	.600
Scull	4	3	.571
Peterson	12	9	.571
Whaler	8	7	533
Finch	7	7	500
Walling	3	3	500

High average—Anderson, 16 games, 188.5; high average, Spinks, 26 games, 187.5; high score (handicap 30 pins)—Kosier, 249; high score, flat—Gustavson, 222.

GORGONA.

A farewell reception was held in honor of Mr. and Mrs. F. C. Freeman at the Gorgona Y. M. C. A. on Thursday night, July 27. Several short addresses were given, and a program, consisting of vocal solos, recitations, and an exhibition wrestling match, was rendered. Music was furnished by the Gorgona orchestra, and refreshments were served.

Members of the health league met Friday night, July 28, and organized a local league, electing the following officers: President, Jess T. Hopkins; vice-president, F. G. Swanson; secretary and treasurer, Geo. H. Auer.

Basketball practice was started on Wednesday night, July 26. About a dozen men were out. The work consisted only in throwing baskets and passing, and will be confined to such for the present.

GATUN.

Two hundred and fifty men attended the "Pumpkin pie smoker," held at the clubhouse on Saturday night, July 29. The program included selections by the Camp Elliott orchestra, vocal solos, bag punching, wrestling, a comedy sketch, impersonations, and a pie eating contest.

Mr. Fox of Gorgona, and Mr. Barte of Gatun, were the two principal speakers at the meeting of the literary club on Wednesday evening, July 26. The subject for discussion was "The present political situation at Washington."

At the moving picture entertainment on Tuesday evening, July 25, the orchestra from the *Prinz Joachim* played.

CRISTOBAL.

The debating club, at its regular session on Wednesday evening, July 26, discussed the proposition that "The present day church has a destructive influence on the spiritual and intellectual life of its members." The affirmative won. The subject for the meeting on August 9 will be "Vivisection." This club is open to all who may desire to join, and every one is invited to attend the meetings.

High bowling scores for the week ending July 29 were, as follows:

Duckpins—Claherty, 122; Gibson, 118; Jacques, 113, 104; Smith, 110, 105; Hess, 107; Weston, 107; Barrett, 105, 103, 100.

Tenpins—Furlong, 219; Groves, 216; Gibson, 215, 207, 206, 201; Collins, 215, 206; Wheeler, 215; Bullard, 214, 207; T. Burns, 214; Rigney, 204.

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal, Colon, and Balboa, during the week ending July 29:

Prinz Joachim., July 24, from New York, with 7 pieces steel beams for stock.

William Cliff, July 27, from Liverpool, with 61 pieces dipper lips for Central Division.

Panama, July 25, from New York, with 70 pieces steel beams, 123 bundles steel bars, 90 cases bolts and rivets, 135 kegs bolts and rivets, 9 cases files, 2,545 bundles pipe, 16 cases rubber packing, 20 cases lubricating oil, 30 barrels rosin, 12 cases soap, for stock; 380 coils copper wire for Panama Railroad Company; 72 coils copper wire, 25 pieces car couplers, for Mechanical Division; 30 cases mechanical fog horns for Atlantic Division; and a miscellaneous cargo, the whole consisting of 3,618 packages, weighing 197 tons.

Zacapa, July 27, from New York, with 52 pieces steel bars and channels, 11 bundles steel bars, for stock; 73 pieces steel angles for Atlantic Division.

Turrialba, July 27, from New Orleans, with 9 crates paste, 252 barrels fire clay, 2,724 pieces yellow pine lumber, 126 pieces white oak lumber, for stock; 34 pieces white oak lumber, 4,165 bundles yellow pine lumber, for Mechanical Division; 5 lengths steam shovel chains for Central Division.

Cuzco, July 28, from Seattle, with 1,108 pieces lumber (flooring), 11,051 pieces lumber, Douglas fir, for stock

Prinz Eitel Friedrich, July 29, from New York, with 200 barrels carbolic acid, 224 cases blasting caps, for stock; 12 barrels hardware for Mechanical Division; 18 packages electrical material for Panama Railroad Company.

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending August 9, 1911, (75th meridian time):

DATE.	Low.	High.	Low.	High.	Low.
	A.M.	A.M.	P.M.	P.M.	P.M.
August 3	4.05	10.05	4.41	10.51	......
August 4	5.08	11.07	5 45	....	
			A.M.		
August 5		12.07	6.13	12.15	6.48
August 6		1 20	7 18	1 20	7.45
August 7		2 15	8 10	2.12	8.33
August 8		2 57	8 58	2.57	9.14
August 9		3 32	9 38	3 35	9 53

The following vessels arrived at, or departed from, the port of Balboa during the week ending July 29:

Arrivals—July 23, *Leelanaw*, from San Francisco; July 24, *Urubamba*, from Callao; *City of Sydney*, from San Francisco; *Chile*, from Guayaquil; *Guatemala*, from Valparaiso; July 26, *Riverside*, from San Francisco; July 27, *Cuzco*, from San Francisco; July 28, *City of Para*, from San Francisco.

Departures—July 25, *Manavi*, to Buenaventura; *Quito*, to Guayaquil; *Kansas City*, to San Francisco; July 26, *Limari*, to Valparaiso; July 29, *Urubamba*, to Callao.

OFFICIAL CIRCULARS.

Drinking Water for Men at Work.

CULEBRA, C. Z., July 26, 1911.

HEADS OF DEPARTMENTS AND DIVISIONS:

I am in receipt of the following letter from the Chief Sanitary Officer:

"I have the honor to recommend that instructions be issued, so that foremen, and others, in charge of gangs on the Canal Zone, will see that water boys get their drinking water supply only from the authorized supplies, whenever available, and that the use of water from springs or streams be forbidden.

"Sanitary inspectors report some little carelessness in this regard, and I believe that such instructions issued from time to time will refresh the memories of the old, and call the attention of the new, foremen, to the necessity, as far as possible, of drinking water only from the regular reservoirs."

Please issue the necessary instructions to insure compliance with the foregoing recommendation.

GEO. W. GOETHALS, *Chairman*.

Transfer of Employes.

CULEBRA, C. Z., July 25, 1911.

HEADS OF DEPARTMENTS AND DIVISIONS:

In requesting the transfer of an employe from one division or department to another, the party making the request for transfer should state definitely the vacancy to be filled.

In order that this office may be able to properly identify the vacancy, the name of the last incumbent, the number of the position, when numbered, and authorization for same, should be stated.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Rate for Use of French Locomotive.

CULEBRA, C. Z., July 31, 1911.

CIRCULAR NO. 169-I:

Circular No. 169-F prescribes a rate of $6 an hour for the use of a French locomotive, including crew, as between departments and divisions of the Commission and Panama Railroad Company. This rate was based on the operation of the engine by a "gold" engineer.

A rate of $2.50 an hour for switch engine service, when the engine is operated by hourly silver employes, is hereby established.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Misdirected Letters.

ANCON, C. Z., August 2, 1911.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received in the office of the Director of Posts, and may be secured upon request of the addressee:

Blake, A. O.
Bockins, W. H.
Bray, Mrs. Walter
Clark, E. E.
Connor, John (pkg.)
Croft, Mrs. Florence
Demeis, Tomasso
Erwin, James
Gilmour, Joseph H.
Keough, John W.
McGonagle, Miss Rose M.
McPeek, W. J.
Moyer, Mrs. R. E.
Papadogna, B.
Prior, B. T.
Russ, Michael
Schull, Lewis
Smith, Carl F.
Souders, H. L.
Wilkinson, Hugh R.
Wise, George
Worrell, Oreleah

Married.

BEYER-McNULTY—At the parish house in Ancon, on July 25, 1911, Nellie Anna McNulty of Marquette, Mich., to Walter F. Beyer of Detroit, Mich., the Rev. Father Collins officiating. Canal Zone residence, Culebra.

On Tuesday, August 2, 1911, at 2 p. m., in the Commission chapel, Cristobal, Dr. Charles Martin Strotz of Philadelphia, Pa., and Estella Erwin of McVeytown, Pa., Rev. Carl H. Elliott officiating. Canal Zone residence, Colon Hospital.

Auction Sale of Dairy Cows and Bull Calf.

ANCON, C. Z., July 18, 1911.

On Saturday, August 19, at 10 a. m., there will be sold at public sale to the highest bidder at the Ancon Hospital dairy, two dairy cows, ranging in age from seven to ten years, and one bull (calf) aged two and one-half years. The dairy is located near the insane asylum buildings in the rear of the hospital grounds. The terms of the sale will be cash.

CHAS. F. MASON, *Superintendent*.

Leasing of Government Building.

ANCON, C. Z., July 13, 1911.

Bids will be received by the Collector of Revenues up to and including August 10, 1911, for the leasing to the highest bidder, from August 16, 1911, for a period of not more than three years, of building No. 17 at Empire, owned by the Canal Zone Government. Rent to be payable monthly. The building is of French construction, two stories, and contains, in all, fifteen rooms, with a small outhouse. Bids should be in an envelope marked, "Bids for a lease to building No. 17 at Empire."

TOM M. COOKE, *Collector of Revenues*.

COMMISSARY DEPARTMENT.

"Keep Kool" Clothing.

The Commissary department has received a supply of "Keep Kool" clothing for men. These suits are made of feather-weight fabrics for tropical wear. Owing to limited stock, which is in the nature of a trial order, it is not possible to place them on sale in line stores. They will be sold in the gents' furnishing department of the retail store at Cristobal only.

The open hours at Culebra commissary are from 8 a. m. to 1 p. m., and from p. m. 3 to 7 p. m. All other commissaries are open from 8 a. m. to 1 p. m., and 3 p m. to 7 p. m. with the exception of the Cristobal commissary, which is open from 8 a. m. to 12.30 p. m., and from 2 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning August 1.

FRESH MEATS.	Price.
Mutton—Stewing per pound	6
Shoulder, neck trimmed off, (4 pounds and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing, per pound	10
Shoulder, for roasting (not under 4 pounds), per pound	12½
Chops, shoulder, per pound	16
Chops, per pound	24
Loin, for roasting, per pound	24
Cutlets, per pound	28
Pork—Loin chops or roast, per pound	14
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	8
Corned, No. 1, per pound	12
Corned, No, 2, per pound	10
Chuck roast (3 pounds and over), per pound	12
Pot roast, per pound	12½
Rib roast, second cut (not under 3½ pounds), per pound	16
Rib roast, first cut (not under 3 pounds), per pound	18
Sirloin roast, per pound	19
Rump roast, per pound	19
Porterhouse roast, per pound	20
Steak, chuck, per pound	12½
Round, per pound	13
Rib, per pound	18
Sirloin, per pound	19
Rump, per pound	19
Porterhouse (not less than 1½ pounds), per pound	20
Tenderloin (Western), per pound	24

MISCELLANEOUS.	
Caviare, Russian per tin	47, 89
Livers—Beef, per pound	7
Calf, each	60
Half, each	30
Steak, Hamburger, pkg.	13
Sausage—Bologna, per pound	10
Frankfurter, per pound	12
Lieberwurst, per pound	10
Devonshire Farm	17
Sweetbread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	†27
one-half dozen only	14
Bluefish, fresh, per pound	14
Halibut, fresh, per pound	15
Shads, fresh, each	70
Shad roes, fresh, per pair	35

POULTRY AND GAME.	
Chickens—Fancy roasting, milk fed, large, each	1.25
Fancy roasting, milk fed, med., each	1.00
Fancy roasting, corn fed, about 4½ pounds, each	90
Fowls, each 60, 70, 80, 90,	1.00
Ducks, Western, about 4½ pounds, each	1.00
Broilers, milk fed, each	60
corn fed, each	55
Turkeys, per pound	26
Squabs, each	35
Capons	2.10
Fryers, corn fed	60
Partridges, each	50
Grouse, each	50

CURED AND PICKLED MEATS.	
Ham—German, Westphalia, per pound	36
Sugar cured, per pound	18
Sliced, per pound	20
Half, for boiling, per pound	19
Boiled, per pound	†26
Hocks, per pound	‡8
Bacon—Breakfast, whole piece, per pound	22
Breakfast, sliced, per pound	23
Pork, salt family, per pound	14
Ox Tongues each	1.00
Pig's feet, per pound	9
Tongues, per pound	14
	Price.
Sliced bacon in 1-pound tins, per tin	30
In 1-pound jars, per jar	30

DAIRY PRODUCTS.	
Butter—Creamery special, per pound	30
Cheese—Roquefort, per pound	38
Philadelphia cream, cake	18
Young America, per pound	18
Swiss, per pound	26
Edam, each	1.00
Edam, in tins, tin	25
Neufchatel, cake	6
Gouda, per pound	34
Milk (Certified), per bottle	**25
Ice cream, quart	‡25
½-gallon	‡50

VEGETABLES AND FRUITS.	
Beets, per pound	6
Corn, green, per doz.	24
Cabbage, per pound	4½
Cucumbers, per pound	10
Lettuce, per pound	†12
Onions, per pound	5
Potatoes, white, per pound	4½
sweet, per pound	2
Pears, Alligator, each	6
Rhubarb, per pound	3
Tomatoes, per pound	8
Turnips, per lb.	3
Yams, per pound	3
Apples, fancy table, per pound	10
Cantaloupes, each	10
Grapefruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, California, per dozen	†42
Watermelons, each	30

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*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Rainfall from July 1 to July 29, 1911, Inclusive.

Stations.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	2.06	23	5.29
Balboa	3.33	3	6.87
*Miraflores	1 70	6	6.79
Pedro Miguel	1.50	6	6.00
Rio Grande	1.45	6	6.67
Central Section—			
Culebra	1 29	6	5.62
*Camacho	1.11	6	6.26
Empire	.77	6	3.66
Gamboa	1.95	8	7.24
*Juan Mina	2.40	6	8.44
Alhajuela	3.92	5	8.84
*El Vigia	4.20	5	8.76
*Gorgona	1.64	8	6.45
San Pablo	1.68	6	5.35
Tabernilla	1.01	6	4.36
Bohio	2.28	5	7.29
*Monte Lirio	2.93	5	10.53
Atlantic Section—			
Gatun	1.60	5	6.66
*Brazos Brook	3.97	5	14.03
Cristobal	3.88	5	14.45
Porto Bello	3.85	28	14.43

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—value midnight to midnight.

To 5 p. m., July 28.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, July 29, 1911. All heights are in feet above mean sea level.

Day and Date.	Station.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun., July 23	128.7	94.5	47.5	14.4	14.2
Mon., July 24	126.8	93.1	46.6	14.4	14.2
Tues., July 25	126.3	92.8	46.0	14.3	14.1
Wed., July 26	126.1	92.7	45.5	14.1	14.0
Thurs., July 27	126.1	92.6	45.4	13.9	13.8
Fri., July 28	127.3	93.6	46.2	13.8	13.7
Sat., July 29	126.6	93.3	46.2	13.7	13.6
Height of low water	125.0	92.0	44.0		

Notice to Mariners.

The master of the steamship *Trinculo* reports that on June 11 his ship struck on a submerged rock, or other obstruction. The bearings taken at the time were: East end Tabogilla Island S. ½ E. San José Rock, N. W. x W. ¾ W.

Masters of all vessels should exercise great care in passing this vicinity.

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to changes.

NEW YORK TO CRISTOBAL.

Cristobal	P. R. R.	Thursday	July 27
Colon	P. R. R.	Monday	July 31
Allianca	P. R. R.	Saturday	Aug. 5
Panama	P. R. R.	Saturday	Aug. 12
Advance	P. R. R.	Friday	Aug. 18
Colon	P. R. R.	Thursday	Aug. 24
Allianca	P. R. R.	Wednesday	Aug. 30
Panama	P. R. R.	Tuesday	Sept. 5
Advance	P. R. R.	Monday	Sept. 11
Colon	P. R. R.	Monday	Sept. 18
Allianca	P. R. R.	Saturday	Sept. 23
Panama	P. R. R.	Friday	Sept. 29
Advance	P. R. R.	Thursday	Oct. 5
Colon	P. R. R.	Thursday	Oct 12

CRISTOBAL TO NEW YORK.

Advance	P. R. R.	Sunday	Aug. 6
Colon	P. R. R.	Saturday	Aug. 12
Allianca	P. R. R.	Friday	Aug. 18
Panama	P. R. R.	Thursday	Aug. 24
Advance	P. R. R.	Wednesday	Aug. 30
Colon	P. R. R.	Tuesday	Sept. 5
Allianca	P. R. R.	Monday	Sept. 11
Panama	P. R. R.	Sunday	Sept. 17
Advance	P. R. R.	Saturday	Sept. 23
Colon	P. R. R.	Saturday	Sept. 30
Allianca	P. R. R.	Friday	Oct. 6
Panama	P. R. R.	Thursday	Oct. 12
Advance	P. R. R.	Tuesday	Oct. 17

NEW YORK TO COLON.

Almirante	U. F. C.	Thursday	July 27
Prinz Aug. Wilhelm	H.-A.	Saturday	July 29
Santa Marta	U. F. C.	Thursday	Aug. 3
Prinz Sigismund	H.-A.	Friday	Aug. 4
Thames	R. M.	Saturday	Aug. 5
Metapan	U.F. C.	Thursday	Aug. 10
Prinz Joachim	H.-A.	Saturday	Aug. 12
Zacapa	U. F. C.	Thursday	Aug. 17
Prinz Eitel Friedrich	H.-A.	Friday	Aug. 18
Trent	R. M.	Saturday	Aug. 10
Almirante	U. F. C.	Thursday	Aug. 24
Prinz Aug. Wilhelm	H.-A.	Saturday	Aug. 26
Oruba	R. M.	Saturday	Sept. 2

COLON TO NEW YORK.

Metapan	U. F. C.	Thursday	July 27
Prinz Joachim	H.-A.	Tuesday	Aug. 1
Zacapa	U. F. C.	Thursday	Aug. 3
Prinz Eitel Friedrich	H.-A.	Saturday	Aug. 5
Trent	R. M.	Tuesday	Aug. 8
Almirante	U. F. C.	Thursday	Aug. 10
Prinz Aug. Wilhelm	H.-A.	Tuesday	Aug. 15
Santa Marta	U. F. C.	Thursday	Aug. 17
Prinz Sigismund	H.-A.	Saturday	Aug. 19
Oruba	R. M.	Tuesday	Aug 22
Metapan	U. F. C.	Thursday	Aug. 24
Prinz Joachim	H.-A.	Tuesday	Aug. 29
Zacapa	U. F. C.	Thursday	Aug. 31
Clyde	R. M.	Tuesday	Sept. 5

NEW ORLEANS TO COLON.

Abangarez	U. F. C.	Saturday	July 29
Atenas	U. F. C.	Saturday	Aug. 5
Turrialba	U. F. C.	Saturday	Aug. 12
Abangarez	U. F. C.	Saturday	Aug. 19
Atenas	U. F. C.	Saturday	Aug. 26
Turrialba	U. F. C.	Saturday	Sept. 2

COLON TO NEW ORLEANS.

Turrialba	U. F. C.	Thursday	Aug. 3
Abangarez	U. F. C.	Thursday	Aug. 10
Atenas	U. F. C.	Thursday	Aug. 17
Turrialba	U. F. C.	Thursday	Aug. 24
Abangarez	U. F. C.	Thursday	Aug. 31
Atenas	U. F. C.	Thursday	Sept. 7

Hamburg-American steamers leave Colon for New York via Kingston at 10 a. m. on sailing dates. The *Prinz August Wilhelm* and *Prinz Joachim* call at Santiago de Cuba, on both outward and homeward voyages. A ship will leave Colon for Bocas del Toro, also for Port Limon at 5 p. m. on August 9.

The Leyland line steamer *Antillian* sails for New Orleans, direct, on, or about August 5.

Royal Mail steamers leave for New York on alternate Tuesdays, at 10 a. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships for New York via Kingston on Thursday at 11 a. m.; for Bocas del Toro on Monday at 6 p. m.

CANAL RECORD

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The Canal Record

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Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Steam Shovel Excavation in Culebra Cut.

On Saturday, July 29, there were excavated from Culebra Cut, 61,896 cubic yards, car measurement, which is the highest daily record for any wet season month, and was only 2,838 cubic yards less than the highest record ever made in one day for any dry season month in Culebra Cut. Ten shovels, working in the Culebra district, averaged 2,160.2 cubic yards.

Contract for Spillway Gates, Bridges, and Caissons.

Award has been authorized to the McClintic-Marshall Construction Company for 22 regulating gates for the spillways at Gatun and Miraflores, two steel caissons to ensure a means of repairing the gates, and 22 bridges to connect the piers in which the gates will be erected, thus forming a bridge across the crest of each spillway. An article, describing the use of the gates, caissons, and bridges, was published in THE CANAL RECORD of July 12. Only two bids were received, and award was authorized to the lower bidder, the price, $102,930 being 3½ per cent less than the estimated cost.

The gates will be of the Stoney type, consisting of a system of horizontal girders, vertical end posts, cross frames, and intercostals, forming a skeleton, upon which will be placed steel plate sheathing, extending from top to bottom on the upstream side of the gate. Each will be 46 feet 3½ inches long, 19 feet high, and will weigh 42½ tons. It will have a motion of 22 feet 6 inches, and must stand a head of 18 feet. The office of the gates is to control the water level in Gatun and Miraflores lakes.

The caissons will be 49 feet long and 24 feet 4 inches high. Their use will be to form a dam across any of the apertures in the gate piers, thus making it possible to repair the gates and gate tracks.

Each bridge will be 45 feet long and 3 feet wide; and will consist of two plate steel girders, surmounted by a floor of checkered steel. The total weight of the 22 bridges will be about 215 tons.

The contract for railings for the spillway bridges has been awarded to the Vulcan Rail and Construction Company, the lowest of four bidders.

Colon Quarantine Station.

A type-17 house at San Pablo will be moved to Colon, and reerected at the quarantine station for use as an office and living rooms for the custodian, who is at present occupying quarters in the main building. At times, recently, the accommodations for persons held in detention, have been insufficient, and it is expected that the additional room provided by the change will temporarily relieve the situation.

High Daily Steam Shovel Records.

A high record for excavation was made by steam shovel No. 253 in the Empire district of the Central Division in Tuesday, August 1, which loaded 190 Lidgerwood side flat cars of 19 cubic yards each, or 3,610 cubic yards.

This is the highest record for a shovel of this class in the Central Division, exceeding by 125 cubic yards the previous highest record of 3,485 cubic yards, made by shovel No. 265 on January 21, 1909.

The highest two daily records for the Central Division for steam shovels of any class are, as follows:

4,823 cubic yards by steam shovel No. 213 on March 22, 1910.

4,009 cubic yards by steam shovel No. 213 on March 5, 1910.

Roller Trains, Seals, Bearings, and Rollers for Valves in Locks and Spillway Gates.

Award has been authorized to the Westinghouse Machine Company, the lowest of three bidders, for the roller trains and sealing devices for the rising stem gate valves for the locks, 116 trains and sealing devices for Gatun, 60 for Pedro Miguel, and 84 for Miraflores; the roller trains and sealing devices, rocker bearings, and gate rollers for Stoney gates at spillways, 44 roller trains, 44 sealing devices, 44 rocker bearings, and 176 gate rollers for the 14 gates at Gatun spillway, and the 8 gates at the Miraflores spillway.

The material required for the 260 roller trains for valves consists of 254.800 pounds of structural steel (to be finished by the Commission, but fabricated and delivered by the contractor), 50,700 pounds of cast steel, 360,360 pounds of tool steel, 15,860 pounds of steel bolts, 1,300 pounds of steel pins. The 260 sealing devices will require 67,210 pounds of cast bronze, 24,700 pounds of bronze bolts, and 2,470 pounds of bronze washers.

The material for the 44 roller trains will consist of 5,100 pounds of cast steel, 45,500 pounds of tool steel, 1,700 pounds of steel bolts, 33,100 pounds of structural steel, this last to be furnished by the Commission, but fabricated and delivered by the contractor. The 44 rocker bearings and tracks will require 288,000 pounds of structural steel, and 6,700 pounds of steel bolts. The 44 sealing devices will require 65,200 pounds of structural steel, 37,300 pounds of cast steel, 14,600 pounds of cast bronze, 3,900 pounds of rolled bronze, 850 pounds of bronze bolts, 5,000 pounds of steel bolts. The 176 gate rollers will require 1,400 pounds of steel pins, 12,000 pounds of cast iron, 2,600 pounds of steel bolts, and six pounds of brass.

Sanitary Drinking Cups.

A supply of sanitary paper drinking cups has been ordered for the Isthmus, and these will be placed in the coaches of the Panama railroad, substituting the public glass now in use, as soon as they are received. Arrangements have also been made for individual drinking cups for the hospital cars.

1,000,000 Yards of Crushed Rock.

On June 26, 1911, the record of 1,000,000 cubic yards of crushed rock at the Ancon quarry plant was passed. The plant was first placed in operation on February 8, 1910, but there were several interruptions during the first six months, so that if the actual working time between February 8, 1910, and June 26, 1911, were computed, it would probably indicate that the 1,000,000 cubic yards of crushed rock could have been produced within one year's time, providing the crushers were operated for a full 8-hour day every day in the year, except Sundays and holidays. Since June 26, there has been produced at the crusher plant a total of about 90,000 cubic yards, leaving about 900,000 cubic yards still to be crushed to complete the estimated requirements for the Pacific locks.

The best day's output was on December 20, 1910, when 4,290 cubic yards of rock were crushed in 11.20 hours actual working time, an average of over 383 cubic yards an hour. The best month's production was in December, 1910, when 79,699 cubic yards were produced during the 26 working days of the month, an average of over 3,318 cubic yards each working day.

The principal delays in the operation of the plant have been caused by substituting parts of the machinery for those which experience proved better fitted for the work, and in making minor repairs. The time so lost was partly made up by the operation of the plant for one period on a 12-hour schedule. At the present time, an 8-hour day is in effect, as there is plenty of crushed rock in storage, especially at Miraflores Locks, where the consumption is now the greatest.

The operation of the plant has been attended with comparatively few minor accidents to the machinery, one of the most peculiar of them being to the heavy iron cap over the main crusher, which serves as a buffer for the working parts of the machine when the

NOTES OF PROGRESS.

(*Continued.*)

large rock is dumped into it. In some manner, a long, thin piece of rock became wedged in between the crusher shaft and its covering; from there it worked its way upwards, finally forcing the cap off into the hopper, where the jaws of the machine immediately began work upon it. Before the power could be shut off, it was cracked in several places.

The record of operations at the crusher plant for the two weeks ending August 5 is, as follows:

DATE.	Hours worked.	Cubic Yards.
July 24	7.30	2,744
July 25	7.00	2,414
July 26	7.35	2,595
July 27	6.05	2,339
July 28	7.20	2,664
July 29	7.00	2,933
Total	42.30	15,689

DATE.	Hours worked.	Cubic Yards.
July 31	4.15	2,082
August 1	7.50	2,945
August 2	6.55	2,371
August 3	6.40	2,676
August 4	7.25	2,555
August 5	6.25	2,432
Total	39.30	15,061

Finances of Fourth of July Celebration.

A statement of amounts contributed to the Fourth of July celebration held at Cristobal, C. Z., follows:

CONTRIBUTED BY	Amount.	No. of employes on June roll.	Per capita
Office of Chairman and Chief Engineer	$237.00	171	$1 40
Quartermaster's Dept.	274.00	199	1 38
Atlantic Division	1,027.67	884	1 17
Commissary and Subsistence	291.60	290	1.00
Civil Administration	288.00	299	.96
Panama Railroad Company	519.50	582	.89
Mechanical Division	491.80	769	.64
Disbursing office	15.00	25	.60
Pacific Division	360.50	609	.59
Sanitary Department	191.15	386	.49
Central Division	327.50	785	.42
Examiner of Accounts	38.25	99	.39
Total—Employes	$4,061.97	5,098	$0.79
Received from Marine Corps as Fourth of July Celebration committee's part of proceeds of minstrel show given at the National Theatre, Panama, on July 3	102.38		
Received from others than the above	1,432.85		
Total—All sources	$5,597.20		

Those having outstanding amounts on their lists are requested to hasten collections, and send the money to the chairman of the finance committee, Empire, C. Z. The expenditures to date aggregate over $3,500.

Bills incurred by the entertainment and amusement committee for the Fourth of July celebration, 1911, should be forwarded to the chairman of the subcommittee which ordered the expenditure, who will approve the same and forward to Mr. Muenchow, Secretary, Entertainment and Amusement committee, Gatun, C. Z. The chairmen of the subcommittees are, as follows:

Subcommittee on aquatics, C. J. Anderson, Cristobal; subcommittee on decorations and amusements, Wm. F. Shipley, Cristobal; subcommittee on refreshments and comforts, John Burke, Cristobal; committee on fire department contests and exhibitions, C. E. Weidman, Cristobal; committee on Marines, Lieutenant Wirgman, Bas Obispo; subcommittee on police department and stands, Lieutenant A. S. Belknap, Ancon; subcommittee on property, J. H. Humphreys, Cristobal; subcommittee on exercises, F. A. Gause, Ancon; subcommittee on printing and programs, Captain C. Nixon, Cristobal; subcommittee on prizes, G. M. Fechtig, Cristobal; subcommittee on athletics, L. G. Thom, Gatun.

Sailing of the "Cristobal."

The sailing of the *Cristobal* has been set for Saturday, August 12, at 5 p. m.

CONCRETE WORK IN THE LOCKS.

Over 59 per cent of the concrete for all the locks is in place, the amount at the close of the work on August 5, being 2,542,308 cubic yards, out of a total of approximately 4,284,400. A total of 31,913½ cubic yards of concrete was laid in the locks during the week ending August 5.

GATUN LOCKS.

Over 72 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of the work on August 5, being 1,512,655 cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each working day for the week ending August 5, and of the total, follows, and a similar statement for the work in the Spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
July 31	2,082	32.58	8	528	7.00	2	138	2,748
August 1	1,754	27.34	8	592	8.40	2	208	2,554
August 2	1,698	27.06	8	556	8.40	2	188	2,442
August 3	1,952	36.52	6	602	8.40	2	178	2,732
August 4	1,898	29.32	8	482	7.40	2	268	2,648
August 5	2,106	33.54	6	636	8.40	2	274	3,016
*Portable mixers				428½				428½
Total	11,490	187.56	7.33	3,824½	49.20	2	1,254	16,568½
Previously reported								1,496,086½
Grand total								1,512,655

*The 428½ yards shown for the portable mixers are reinforced concrete, and were placed on the following days: July 31st, 87½; August 1st, 58½; August 2d, 56½; August 3d, 75; August 4th, 76; August 5th, 75.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is over 83 per cent completed, 698,220 cubic yards, out of a total of 837,400, having been placed at the close of work on August 5. The record for each of the six 8-hour working days of last week, follows:

DATE.	AUXILIARY PLANT.						Large stone.	Total.
	2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
July 31	676	17.00	3	148	11.83	3		824
August 1	664	20.00	3	138	8.30	2		802
August 2	396	12.00	3	143	10.00	2		539
August 3	584	15.00	3	145	9.50	3		729
August 4	586	18.00	3	95	6.00	2		681
August 5	622	18.00	3	219	13.67	2		841
Total	3,528	100.00	3	888	59 30	2.33		4,416
Previously reported							4,441	693,804
Grand total							4,441	698,220

MIRAFLORES LOCKS.

Over 24 per cent of the concrete for the system of two twin locks at Miraflores was in place on August 5, the total amount on that date being 331,433 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT.							Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
July 31	1,170	19.83	5	598	12.50	2	90	9.75	2		1,858
August 1	1,246	24 17	5	558	12.00	2	89	7.00	2		1,893
August 2	960	18.08	5	622	14.00	2	135	12.00	2		1,717
August 3	508	11.17	5	766	14.00	2	138	14.00	2		1,412
August 4	1,150	20.17	5	744	14.00	2	156	15.00	2		2,050
August 5	1,000	22.00	5	834	12.00	2	165	15.50	3		1,999
Total	6,034	115 42	5	4,122	78.50	2	773	73.25	2.17		10,929
Previously reported										3,693	320,504
Grand total										3,693	331,433

LOCK CULVERT VALVES.

Conditional Award Made—Description of the Appliances and their Use.

Award has been authorized to the McClintic-Marshall Construction Company, providing certain modifications are agreed upon, for the rising stem gate valves, guard gate valves, lateral culvert valves, bulkhead gates, and screens for the locks, according to the following schedule. There were two bidders, and the award is to the lower, the price being 3.2 per cent below that estimated by the Commission.

Description.	Number of Valves, Gates, etc.				
	Total.	Gatun.	Pedro Miguel.	Miraflores.	Total Weight.
					Pounds.
Rising stem gate valves	130	58	30	42	2,807,610
Lower guard gate valves	12	4	4	4	*a*188,712
Lateral culvert valves	6	2	2	2	*b* 51,642
Bulkhead gates to middle wall culvert	12	6	2	4	*c* 49,920
Bulkhead gates for side wall intakes	9	3	3	3	*d*248,400
Bulkhead gates for middle wall intakes and outlets	18	6	6	6	*e*424,800
Screens for side wall intakes	18	6	6	6	176,040
Screens for middle wall intakes	18	6	6	6	161,640
Total weight of metal					4,108,764

a—Plus 5,280 board feet of timber.
b—Plus 840 board feet of timber.
c—Plus 660 board feet of timber.
d—Plus 855 board feet of timber, and 2,790 square feet canvas.
e—Plus 1,710 board feet of timber, and 5,040 square feet canvas.

Rising Stem Gate Valves—These valves will be 10 feet 8 inches wide and 18 feet 10 inches high, and their office is to control the flow of water through the large culverts in the walls of the locks in the filling and unwatering of the lock chambers. Each one will weigh 21,597 pounds, of which 16,000 pounds will be nickel steel, 2,340 pounds structural steel for roller tracks, 3,160 pounds cast steel, and the balance, bolts, pins, and rubber. The valves are arranged in pairs, separated by a pier 4 feet 3 inches wide in the middle of the culvert, dividing it into two rectangular culverts 8 feet wide by 18 feet high. Each valve is designed to operate in a well, and to travel on two live roller trains having a span of 10 feet, from center to center of bearings. The trains travel on two tracks, which are fastened to the downstream face of the wall castings, which are set in the masonry. In operation, the valve will have an average range of motion of 18 feet in a vertical plane, but will be so constructed as to permit its being raised to the bottom of the machinery pit, and removed entirely from the well for repairs. It will have a play of only ¼-inch upstream, and a lateral play of only ⅛ inch either way, making a total lateral play of ¼-inch. Each valve will be connected near the center to a stem operated by a motor situated near the top of the lock wall. During ordinary operation, the valves will be under a head of about 60 feet, but in certain cases, they may be required to operate under a 76-foot head, making the 18-foot travel in about one minute.

Lower guard gate valves—These valves will be 10 feet 7 inches wide and 19 feet 3½ inches high, and their use will be to control the flow of water in the culverts in the side walls of the locks, when it becomes necessary to unwater the culverts. Each will operate in a rectangular concrete chamber, 32 inches deep by 11 feet 3 inches wide, and will close an opening 8 feet wide and 18 feet high. In general construction, these valves will conform to that of the rising stem gate valves. Each will weigh 15,726 pounds, 15,200 pounds of which will be of nickel steel. The seats and seals on the sides and top of the valves will be of wood.

Lateral culvert valves—These valves will be 10 feet 7 inches wide and 10 feet 9½ inches high, and will follow in construction the rising stem gate valves. Their use will be to regulate the flow of water between the safety and lower gates, at the lower end of the upper lock in each flight of locks. Each valve is designed to operate in a rectangular concrete chamber, 32 inches deep and 11 feet 3 inches wide, and to close an opening 8 feet wide by 8.5 feet high. The seat and seal on both sides and top of both upstream and downstream faces of the valve will be formed by wooden strips fastened on the valve seating against the masonry. The bottom seat and seal will be formed by a wooden strip, fastened to the bottom beam of valve, seating against the masonry floor of the culvert. This valve is designed to take a pressure head in either direction, but will never have to be operated while under a head. Each will weigh 8,607 pounds, of which 8,300 will be nickel steel.

Bulkhead gates to middle wall culverts—These gates are to close an opening 12 feet high and 5 feet wide in the tunnel opening from the lock chamber to the middle wall culvert, two in each lock chamber. The purpose of this tunnel is to provide a means of access to the middle wall culvert to facilitate the installation and repair of cylindrical valves in the middle wall, by giving free access to the culvert from the lock chamber. The gates are to be placed in cast iron frames set in the masonry, and are to be held in place by cast iron brackets bolted to the sides, top, and bottom of the frames. The wooden strips on the back of the gates are to form the seats and seals of the gate. Each will weigh 4,160 pounds, and will be of structural steel.

Bulkhead gates for side and middle wall intakes and middle wall outlets—These gates are to form bulkheads at the entrances to the side and middle wall culverts at the upper ends, and also the middle wall outlets at the lower ends of all the locks on the Canal. They are to be used only when it is desired to unwater the side and middle wall culverts between the upper operating valves and the intakes, and the middle wall culverts from the outlets to the lower operating valve. They close an opening 8 feet wide by 18 feet high in the side walls and 8 feet wide by 15 feet high in the middle wall; are arranged in triplets with piers between the openings, and seat directly against the masonry in grooves provided for that purpose. They are never operated under a head, but provision is made for removing them when not in use. The gates consist of a number of I-beams placed one on top of the other, being fastened together by means of long rods running the full length of each section of the gate. There will be two sizes of these gates, 13 feet 10¼ inches by 26 feet 8 21-32 inches for side walls, and 13 feet 10¼ inches by 23 feet 8 21-32 inches for middle walls.

Screens for side and middle wall intakes.—These screens are to guard the inlets in both side walls and middle walls at the upper end of all the locks on the Canal. They guard an opening 8 feet wide by 18 feet high in the side wall, and 8 feet wide by 15 feet high in the middle wall; are arranged in triplets with piers between the openings, and seat directly against the masonry in grooves provided for that purpose. The screens consist of a skeleton frame, composed of I-beam verticals and channel cross frames, inclosing bays of round-edge flats, properly spaced to form the required opening for the waterway. There will be two sizes of screens—13 feet by 24 feet 11 inches for side walls, and 13 feet by 22 feet 1 inch for middle walls.

The Six-Year Men.

A meeting of employes interested in the formation of an association of employes and exemployes of the Isthmian Canal Commission and Panama Railroad Company, who have completed six years' continuous service on the Isthmus, will be held at the University Club, in Panama, on Saturday evening, August 12, at 8 o'clock. About 400 persons are now eligible for membership in the prospective association, or will become eligible prior to November 1, 1911. It is impracticable to assemble all of these but it is proposed that about 80 shall meet and perfect an organization. It has been suggested that the association adopt as its device a button to be worn in the lapel of the coat. This button would represent the Canal medal with the two bars, which is too large and heavy, as well as too valuable, to be worn on ordinary occasions. Beyond this, the objects of the association have not been outlined, but it is intended to make it serve useful purposes.

Gatun Dam Spillway.

The concrete work in the Spillway of Gatun Dam is over 66 per cent completed, 149,696 cubic yards, out of a total of 225,000, having been placed at the close of work on August 5. A statement of the amount laid each working day last week, and of the total in place, follows:

Date.	Concrete Laid.	Hours worked.	No. Mixers.
July 31	244	8.00	2
August 1	228	14.00	2
August 2	264	14.00	2
August 3	218	14.00	2
August 4	296	16.00	2
August 5	210	14.00	2
Total	1,460	80.00	2
Previously reported	148,236		
Grand total	149,696		

Electrical Workers.

At the meeting of Local Union, No. 677, I. B. E. W. of Gatun, on August 13, at 2 p. m., Baxter R. Grier will lecture on "Wiring diagrams and formulas."

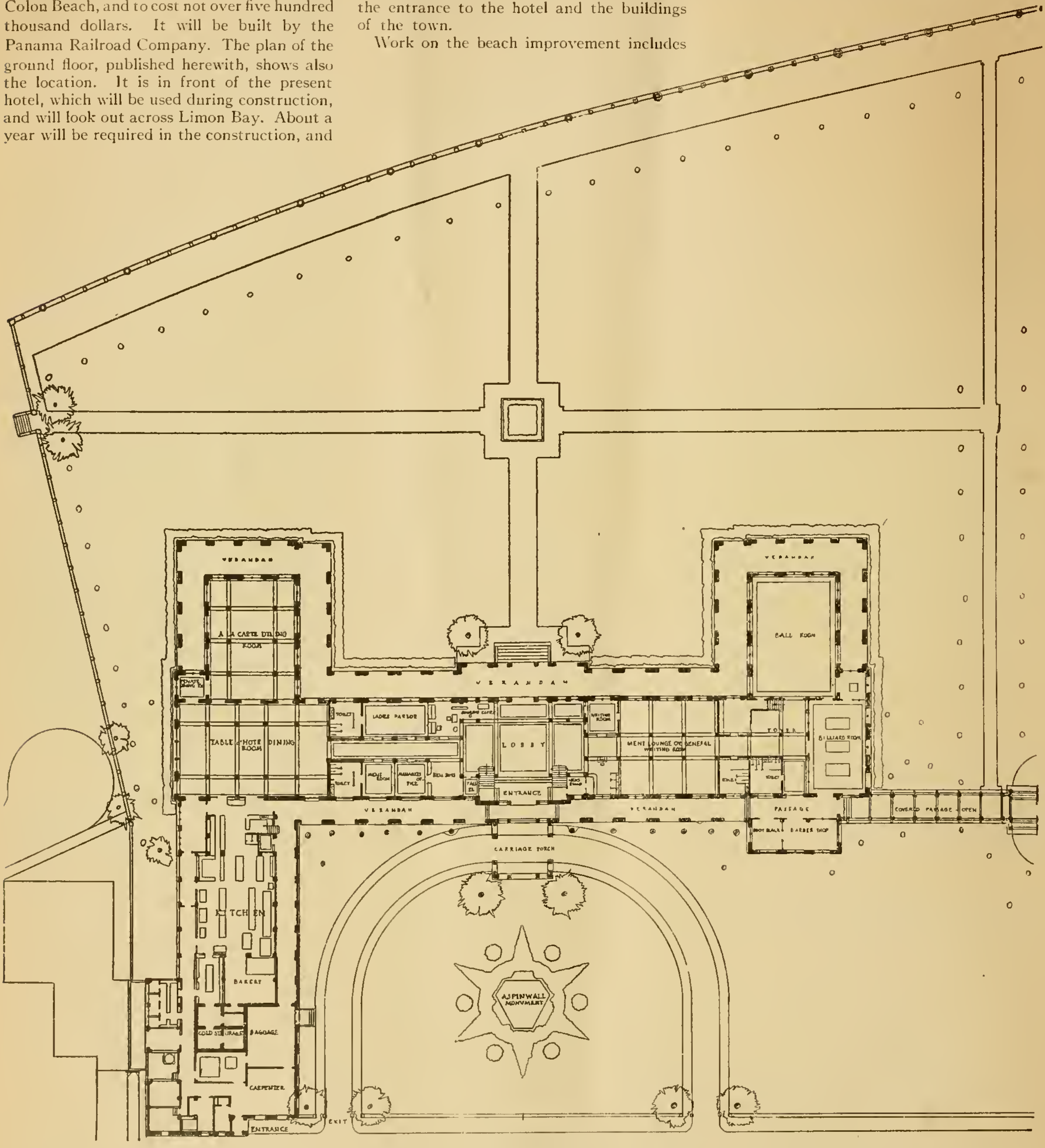
LOST—On Sunday morning, July 30, between Paraiso railroad station and the Church of the Holy Redeemer, Culebra, a bracelet of Costa Rica gold coins. A reward will be given for its return to Mr. E. B. Healey, Paraiso, C. Z.

NEW WASHINGTON HOTEL.

Plans for Concrete and Hollow Tile Building—Grounds and Sea Wall.

Plans have been approved for a new hotel building of the Spanish colonial style, modified to fit local conditions, to be situated on Colon Beach, and to cost not over five hundred thousand dollars. It will be built by the Panama Railroad Company. The plan of the ground floor, published herewith, shows also the location. It is in front of the present hotel, which will be used during construction, and will look out across Limon Bay. About a year will be required in the construction, and work on the foundation was begun this week. The plans are by Cram, Goodhue, and Ferguson, architects, of New York, and the work will be done under their direction. Incidental to the construction, the beach in front of the present hotel is in process of improvement, and the plan contemplates an extension of the present plaza in Colon up to the entrance of the new hotel. With this idea in view, the axis of the hotel is on that of the plaza, so that there will be a broad open space of park, about one-fourth of a mile in extent, between the entrance to the hotel and the buildings of the town.

Work on the beach improvement includes the constructing of a sea wall in front of the hotel site and the filling of the rock shelf, which now shows above water at low tide. In this way, the sea will be kept from further washing of the shore, and a strip of land about 900 feet long, and from 140 to 170 feet wide, will be added to the grounds. The wall is nearing completion. It has a base 5½ feet, top, one foot, which rises to 6 feet above mean sea level, and is anchored to the coral rock by a double row of iron rail. Along the top of the wall will be built a concrete balustrade two and one half feet high, with concrete posts 3 feet 3 inches high, spaced 10 feet from center to center. At its east end, the wall will be blocked out to provide a swim-


VERANDAH
A LA CARTE DINING ROOM
PRIVATE DINING RM
TABLE D'HOTE DINING ROOM
TOILET
LADIES PARLOR
LOBBY
WRITING ROOM
VERANDAH
ENTRANCE
VERANDAH
VERANDAH
MENT LOUNGE OR GENERAL WRITING ROOM
TOWER
BALL ROOM
BILLIARD ROOM
PASSAGE
BOOT BLACK
BARBER SHOP
COVERED PASSAGE - OPEN
CARRIAGE PORCH
KITCHEN
BAKERY
COLD STORAGE
BAGGAGE
CARPENTER
ENTRANCE
EXIT
ASPINWALL MONUMENT

GROUND, OR FIRST FLOOR PLAN.

ming pool 125 by 100 feet, and from 3 to 9 feet deep, which will be open on the sea side, with a baffle wall in front to protect it from rough water. At present, there is no good bathing place on Colon Beach, because a ledge of coral rock extends along the water front, and is just awash at low tide. So far as possible, the cocoanut palms, which adorn the grounds in front of the present hotel, will be preserved, and, where their removal is necessary, an effort will be made to transplant them. The monument to the Panama railroad pioneers, Aspinwall, Chauncy, and Stephens, will be moved from its present site, part of which is included in the northeast corner of the new hotel, to the semicircular flower bed at the city entrance to the new hotel. It is the intention to lay out the grounds around the hotel with plants and trees.

The building will be 300 feet long, will have foundations of gravel concrete; walls of reinforced columns and beams, with hollow tile curtain walls, white cement stucco finish outside, and rooms plastered within; floors of concrete beams, floor slabs of solid concrete, concrete and tile, or of tile, according as cost may warrant; roof of tile. The floors in the kitchen will be of concrete, and in the ballroom, of maple or other hard wood. The woodwork will be reduced to a minimum. The building will be screened against mosquitoes on the leeward side, but, as there are seldom mosquitoes on the seaward side, no screening will be necessary there.

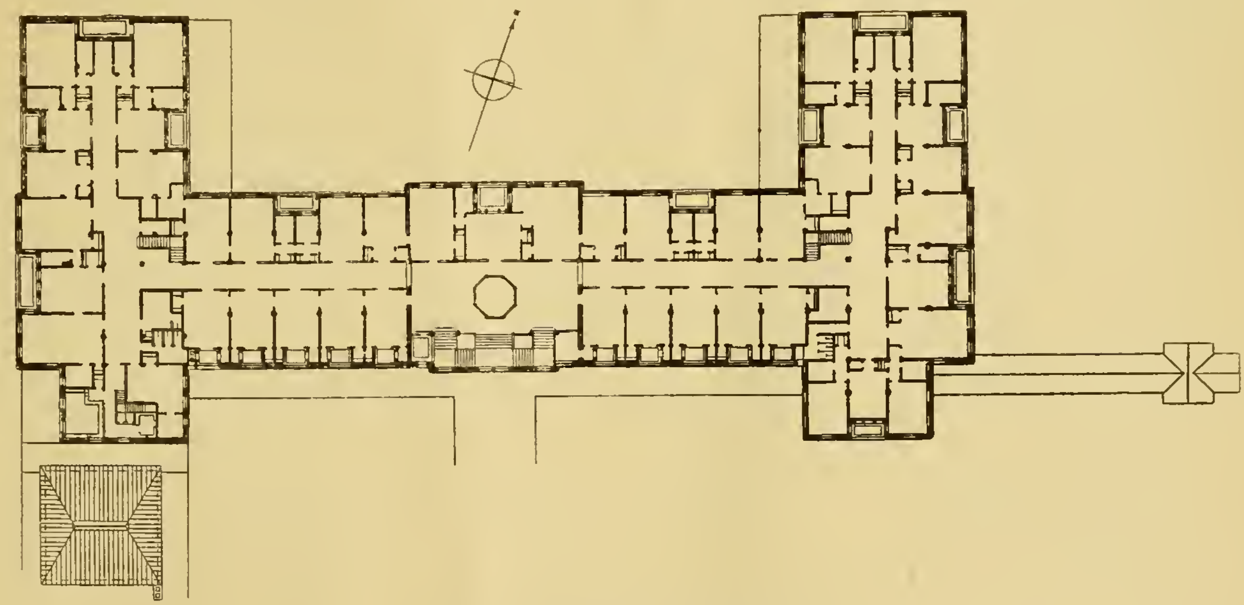
First floor.—The plan of the first floor shows that it is laid out in three sections—dining, reception, and ballroom. The *a la carte* dining room is 37 by 53 feet, the private dining room 12 by 12 feet, and the *table d' hote* 65 by 40 feet, and the commons 11 by 20 feet. Back of these rooms is the kitchen and service plant. It is so laid out that the waiters, on leaving the dining rooms, pass alongside a hamper, where they drop soiled linen, next to a table in front of the dish washer, where they leave soiled dishes, thence to a table on which clean dishes are placed. They pass with the clean dishes, to the steamers, carving table, steam table, and coffee service in succession, thence to the door of the dining room, where they take clean linen, and are checked by the checker, who sits there and keeps track of the food served and of the linen. The coffee, tea, cocoa, ice cream, and other foods that must be served either hot or very cold, are issued at one counter, and that, the nearest to the dining room, so that as little time as possible may be lost in serving them.

The reception section consists of the main entrance with offices, parlors, and writing rooms. The ladies' parlor is 28 by 15½ feet; men's room, 14 by 15½ feet; writing room, 14 by 15 feet; men's lounge or general writing room, 41 by 43 feet; billiard room, 25 by 40 feet. All partitions that can be so constructed, without interfering with privacy extend from the floor about halfway to the ceiling, so that above the height of one's head, the whole ground floor is practically open. This insures good circulation of air, and will add to the coolness of the public rooms. The ballroom is 53 by 37 feet, and is entered from the street by a side door, which gives access to the ballroom, without bringing the dancers into contact with the hotel's guests. The isolated situation of the ballroom minimizes the annoyance of late music to guests.

Second and third floors.—On the second and third floors are 88 bedrooms, ample in size for two beds. All of them are provided with clothes closets fitted with electric lights, both for illumination and to keep the closets dry. The dimensions of type rooms are shown on the plan of the second and third floors. Seventy-six of the rooms let out upon loggias, which serve not more than three rooms. The loggias in the north ends of the wings, toward the sea, are also entered from the public corridors. Practically all the rooms are connected, making it possible to arrange suites of from two to fifteen rooms. In all but four instances, access from connected rooms is by way of passages, not the public corridors, and not through bath rooms. Private baths are generally entered from the private passages, and not from bedrooms. Shower baths are entered generally directly from the bedrooms, and rooms having showers are also provided with lavatories, piped for hot and cold water. Every bedroom will have either a private bath, or a shower bath. In area, the bed rooms average 244 square feet, as compared with 200 square feet, at the Hotel Tivoli.

A comparison of the area of the principal rooms with those of the Hotel Tivoli, follows:

ROOMS.	HOTEL.	
	Tivoli.	Washington
	Sq. Ft.	*Sq. Ft.*
Office	466	540
Foyer	2,435	1,642
Men's lounge	....	1,680
Ballroom	3,219	1,998
Billiard room	1,665	1,000
Dining room	4,884	4,658
Private dining room	....	120
Commons	....	220
Ladies' parlor	444	440
Ladies' toilet	72	210
Men's toilet	72	208
Men's retiring room	....	208
Ballroom toilets	....	416
Bedrooms, average	200	243.6



SECOND FLOOR PLAN.

PERSONAL.

Colonel S. E. Tillman of the Military Academy at West Point, and Major E. R. Stuart, Corps of Engineers, are on the Isthmus inspecting the Canal work.

Mr. Edward Schildhauer, accompanied by Mrs. Schildhauer, will sail on the *Cristobal* on August 12, on his annual leave of absence.

Transfer of Odd Fellows Lodge.

Canal Zone Lodge, No. 3, I. O. O. F., has received authorization from the sovereign grand lodge, through the district deputy grand sire, B. F. Sisson of Gatun, to transfer the seat of its jurisdiction from Culebra to Empire. The move, which is actuated by the fact that many of the lodge members reside at Empire, and that the location will be more central for the members in general, will take place the latter part of August.

The following officers of Canal Zone Lodge were recently installed: Noble grand, Eugene W. Palmer; vice-grand, Edward A. Putnam; secretary, Arthur D. Moore; treasurer, Arthur E. Erickson.

STEAM SHOVEL RECORDS.

Work of Central Division and P. R. R. Relocation Shovels in July.

During the month of July, the total amount of material excavated in the Central Division was 1,360,117 cubic yards, of which 158,901 cubic yards were classified as earth, and 1,201,216 cubic yards as rock. Of this quantity, 1,337,833 cubic yards were removed by steam shovels, and contractors removed 16,928 cubic yards by sluicing, and 5,356 cubic yards by hand.

The high record for the month was made by shovel No. 208, working 25 days in the Culebra district, which excavated 54,866 cubic yards of rock and earth. The second best record for the month was made by shovel No. 207, working 25 days in the Culebra district, which excavated 54,356 cubic yards of rock.

The best record for a shovel of the seventy-ton class was made by shovel No. 109, working 25 days in the Culebra district, which excavated 30,631 cubic yards of rock.

Shovel No. 260, working in the Culebra district, made a high record for one day by excavating 3,040 cubic yards of earth on July 26.

Except where noted, monthly reports are computed by place measurement, while the daily reports are based on car measurement. The best records for the month, and for one day, are shown below:

BEST RECORDS FOR THE MONTH.

EMPIRE DISTRICT.

Shovel No.	Cubic Yards.			
	Earth.	Rock.	Total.	No. of days at work.
253		38,704	38,704	25
220		36,008	36,008	25
215		30,128	30,128	25

CULEBRA DISTRICT.

Shovel No.	Earth.	Rock.	Total.	No. of days at work.
208	10,973	43,893	54,866	25
207		54,356	54,356	25
227		47,840	47,840	25

PEDRO MIGUEL.

Shovel No.	Earth.	Rock.	Total.	No. of days at work.
231		21,260	21,260	18½

BEST RECORDS FOR ONE DAY.

Shovel.	Location.	Date.	Character of material excavated.	Cubic yards.
215	Empire	July 8	Rock	2,454
253	Empire	July 29	Rock	2,413
253	Empire	July 3	Rock	2,280
203	Empire	July 27	Rock	2,223
260	Culebra	July 26	Earth	3,040
208	Culebra	July 17	Rock	2,926
256	Culebra	July 8	Rock	2,879
231	Pedro Miguel	July 22	Rock	1,900
231	Pedro Miguel	July 18	Rock	1,672
231	Pedro Miguel	July 17	Rock	1,634
231	Pedro Miguel	July 21	Rock	1,520

Steam Shovels on Relocated Line.

The total excavation on the relocated line of the Panama railroad amounted to 357,135 cubic yards. Of this amount, 212,510 cubic yards were classified as borrow (75 per cent solid rock,) 64,395 cubic yards as earth, 32,765 cubic yards as loose rock, and 47,465 cubic yards as solid rock.

Company forces removed 350,595 cubic yards, and 6,540 cubic yards were removed by the contractor.

Steam shovels excavated 338,760 cubic yards. Pan car task gangs took out 10,055 cubic yards, and 1,780 cubic yards were excavated for culvert foundations.

The best steam shovel record was made by steam shovel No. 262, working in the Monte Lirio section, which excavated 10,000 cubic yards of earth, and 50,790 cubic yards of solid rock, a total of 60,790 cubic yards.

In the 70-ton class, the best record was made by steam shovel No. 105, working in the Gatun section, which excavated 16,550 cubic yards of earth, and 24,200 cubic yards of solid rock, a total of 40,750 cubic yards.

The best day's record for shovels with 5-yard dippers was made by steam shovel No. 257, working near Gatun, which excavated 3,310 cubic yards of rock on July 31.

The best day's record for 70-ton shovels was made by steam shovel No. 123, working near Empire, which excavated 2,210 cubic yards of earth and rock on July 21.

Month's records are place measurements, and day's records are car measurement. All material was loaded in 10-yard Western dump cars.

BEST RECORDS FOR THE MONTH.

Shovel No.	Location.	Cubic Yards by Cross Section.			
		Days worked.	Earth	Rock.	Total.
262	M. Lirio	25	10,000	50,790	60,790
257	Gatun	25		57,270	57,270
105	M. Lirio	25	16,550	24,200	40,750
123	Empire	24		37,000	37,000

BEST RECORDS FOR ONE DAY.

Shovel.	Location.	Date.	Character of material excavated.	Cubic yards.
257	Gatun	July 31	Solid rock	3,310
262	Monte Lirio	July 6	Solid rock	3,070
123	Gold Hill L... (Empire)	July 21	Earth and rock	2,210
105	Near Monte Lirio.	July 10	Earth	1,970
128	Near Gatun	July 26	Solid rock	1,920

Total steam shovel output during the month of July, 338,760 cubic yards.

Total number of steam shovel working days, 218.

Average output per working day, 1,554 cubic yards.

Civil Service Examinations.

Examinations will be held, probably on September 17, for the following positions: Topographic draftsman, departmental service; copyist topographic draftsman, departmental service; junior engineer draftsman, engineer department at large; physician, Isthmian Canal, and other services.

The first two examinations will each require two consecutive days.

Applications will not be received after August 22 for the above examinations. The kind of examination desired should be stated in requesting information in regard to any of the above.

In answer to the question in application forms as to *bona fide* residence, applicants are required to show such residence *up to the date of application*. It is to be noted that *bona fide* residence does not require continuous bodily presence, but refers to the place at which an applicant, if a voter, is legally entitled to vote.

N. B.—Examination for the position of clerk in the Isthmian Canal Service has not been scheduled to be held during the fall of 1911, and it will probably not be held before the spring of 1912.

JOHN K. BAXTER,
Secretary, Isthmian Civil Service Board.

CULEBRA, C. Z., August 4, 1911.

SOCIAL LIFE OF THE ZONE.

Church Work.

The dedication of the newly completed Baptist church building at Empire will take place on Sunday, August 13. At 11 a. m., the doors of the building will be formally opened by the Hon. W. W. Andrews, United States charge d'affaires at Panama; the preacher at the service will be the Rev R. Graham of Baberton, Ohio. At 3 p. m., an address will be made by W. W. Carrington, and at 7 p. m., the Rev. R. H. Thorbourne, superintendent of the National Baptist Convention, and pastor of the First Baptist Church at Panama, will preach. There will be an entertainment in the church on Sunday, August 20, at 3 p. m., when there will be a program, consisting of a lecture, and music by the choir of the Panama church. A small admission fee will be charged, and the proceeds will go toward the fund for the purchase of an organ for the Empire church.

The Woman's Foreign Missionary Society of the Methodist Episcopal church will hold a meeting, with election of officers, at the home of Mrs. E. M. Keyser, Ancon, on Thursday, September 7. At this meeting, it is expected that the society will welcome Mrs. Harry Compton, wife of the pastor of the church, who will arrive on the Isthmus with her daughter the first week in September. The missionary society was organized on January 7, 1909, and has completed two and one-half years of work with few changes in organization and in its official staff. The first president was Mrs. J. Leon Webster, the official organizer in the Canal Zone. There are 31 members, and 10 honorary members. Two life memberships, valued at $25 each, have been paid to the society. The last election of officers was held in October, 1910. Since that time, there have been public meetings in Balboa, Ancon, Panama, and Corozal. One meeting was held in Culebra, at the request of the women of the Union church, and, in January, a public meeting was held in the parish house in the church on the sea wall, which was attended by men and women of the congregation. Two scholarships are maintained by the society, one in China, and one in the Methodist College in Panama.

Meetings are devoted to the study of missionary literature and the discussion of church work in the different mission fields. Church activities are promoted by the members, sales and social entertainments are given, and the women of the society provide for the special exercises for the children held at Christmas and Easter. On January 5, 1911, a Spanish section of the woman's work was organized, under the title of the Ladies' Aid and Home Missionary Society, with the wife of the pastor of the Spanish department as superintendent. Its members are native Panamanian women, and its object is to propagate the spirit of missionary work among them. Meetings are held monthly in the homes of the members. The treasury of the section is maintained by the sale of aprons and fancy articles, made by the members to order. Since the organization, the membership of the branch has been doubled.

The Ladies' Aid Society at Gatun will hold a public supper at the chapel on Thursday evening, August 17. Since the organization of the society, two suppers have been held, and more than $200 has been raised. The money is devoted to chapel improvements;

the final payment on the piano has been made; the chapel has been carpeted and painted, and a new communion set has been purchased.

The monthly business meeting of the Gatun Christian League was held at the Commission chapel on Thursday evening, August 3. An informal reception followed the business meeting, refreshments being served by the Ladies' Aid Society.

Installation of Officers.

There was an installation of officers in Isthmian Canal Rebekah Lodge, No. 1, Gorgona, on Friday evening, July 28, the district deputy grand sire and suite officiating. The elective officers installed were: Noble grand, Miriam Beetham; vice-grand, Janet Martin; recording secretary, Charles H. Beetham; financial secretary, Henry Lotz; treasurer, Annie Calvit. The appointive officers are: Stephen Calvit, Marie Gaerste, Emma Varenkamp, Florence Evans, Samuel Boyd, Marie Jansen, Richard Stoddard, Robert Varenkamp, and Eleanor Babbitt. These officers will serve until December 31. Meetings are held in the lodge hall at Gorgona on the second and fourth Friday evenings in each month.

Humane Society Meeting.

Members, and those who wish to become members of the Canal Zone Humane Society, are invited to attend the annual meeting at the Hotel Tivoli on Sunday afternoon, August 13, at 3 o'clock. Officers for the ensuing year will be elected. The annual dues of $1 are payable at this meeting.

Married.

BOYER–ORTON—At New Orleans, on July 26, Lotta B., daughter of Mr. and Mrs. Chauncey Orton, to Charles S. Boyer. Canal Zone residence, Gorgona.

OFFICIAL CIRCULARS.

Junior Traveling Engineer.

CULEBRA, C. Z., August 1, 1911.

CIRCULAR No. 266-G:

Effective to-day, Mr. Don E. Irwin is appointed junior traveling engineer, vice Mr. Arthur C. Stone, resigned.

He will perform his duties in accordance with the provisions of Circular No. 266-B.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Profane Language.

CULEBRA, C. Z., August 4, 1911.

CIRCULAR No. 400:

The use of profane or abusive language by foremen or others in authority, when addressing subordinates, will not be tolerated.

GEO. W. GOETHALS,
Chairman and Chief Engineer.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at the Hotel Tivoli, on Sunday, August 13, at 7.30 p. m. The program follows:

1. March—*The Arbitrator*	Bagley
2. Nautical Fantasia	Tobani
3. Waltz—*Gaite*	Waldteufel
4 Characteristic—*Muttering Fritz*	Losey
5. Overture	Selected
6. Request Number—*La Paloma*	Yradier
7. Sextet from Lucia	Donizetti
8. Medley—*Headlights*	Schulz
9. Popular Number—*Kiss Me, My Honey, Kiss Me*	Snyder

CHARLES E. JENNINGS, *Musical Director.*

The next concert will be given at Culebra, C. Z., on Sunday, August 20.

The following vessels arrived at, or departed from, the port of Balboa during the week ending August 5:

Arrivals—July 31, *Ucayali*, from Callao; *Navajo*, from San Francisco; *Ecuador*, from Guayaquil; August 2, *Peru*, from Guayaquil; *Huasco*, from Valparaiso; *Acapulco*, from San Francisco; August 3, *Manavi*, from Buenaventura.

Departures—July 29, *Cuzco*, to the south; July 31, *Guatemala*, to Valparaiso; *Chile*, to Guayaquil; August 5, *City of Para*, to San Francisco; *Ucayali*, to Callao.

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal, Colon, and Balboa, during the week ending August 5:

City of Para, July 31, from San Francisco, with 379 pieces white pine lumber for stock.

Atrato, July 31, from New York, with 125 packages switches for stock.

Navajo, August 1, from Hoquiam, Washington, with 9,225 pieces Douglas fir lumber, 13 cases blasting caps, for stock.

Advance, August 1, from New York, with 188 crates sledge handles, 100 bundles steel bars, 8 cases kitchenware, 13 cases stationery, for stock; 15 cases copper wire and 22 cases carbons for Mechanical Division; 75 bundles steel bars for Pacific Division; 23 cases drugs for Sanitary Department; and a miscellaneous cargo, the whole consisting of 484 packages, weighing 76 tons.

Lewis Luckenbach, August 1, from Philadelphia, with 45 drums gasoline for stock; 46 packages filter plant material for Atlantic Division.

Abangarez, August 3, from New Orleans, with 171 bundles washers for Atlantic and Pacific Divisions; 1,167 pieces white oak lumber and 14 packages chaplets for Mechanical Division; 412 pieces white oak lumber and 1,249 bales hay for stock.

Almirante, August 3, from New York, with 74 pieces steel beams for stock.

Cristobal, August 4, from New York, with 170 cases book paper, 894 drums oil, 39 barrels oil and greases, 800 pails black grease, for stock; 50,000 barrels cement for Atlantic and Pacific Divisions.

Antillian, August 4, from Liverpool, with 16 pieces chain for Pacific Division.

Nancy Lee, August 5, from Baltimore, with 1,050 kegs wire nails, 312 tons coke, 17 barrels paint, for stock; 273 pieces couplers, 100 car wheels, 7 cases electrical material, for Mechanical Division; 24 packages lock material for Atlantic Division; 80 bundles valve material, 8 cases valve material, 17 pieces valve material, 14 packages lock material, for Pacific Division.

Misdirected Letters.

ANCON, C. Z., August 9, 1911.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received in the office of the Director of Posts, and may be secured upon request of the addressee:

Bourt, William
Boyere, Emery
Butt, Cameron A.
Cate, Chas. I.
Coit, Mrs. Evelyn J.
Davidson, E. W.
Diclerson, William E.
Fuentey, Thos.
Hanson, Miss Bernice E.
Harvey, James T.
Haven, Rutherford C.
Hoggins, Joe
Johnstone, Mrs. F. L.
Langford, W. H.
Lepezynski, J. S.
Mills, Roscoe L.
Murray, Samuel G.
Puro, B.
Seale, Fitz S.
Smith, Wilford (pkg.)
Tracey, James
Wilson, William

Auction Sale of Dairy Cows and Bull Calf.

ANCON, C. Z., July 18, 1911.

On Saturday, August 19, at 10 a. m., there will be sold at public sale to the highest bidder at the Ancon Hospital dairy, two dairy cows, ranging in age from seven to ten years, and one bull (calf) aged two and one-half years. The dairy is located near the insane asylum buildings in the rear of the hospital grounds. The terms of the sale will be cash.

CHAS. F. MASON, *Superintendent.*

Leasing of Government Building.

ANCON, C. Z., July 13, 1911.

Bids will be received by the Collector of Revenues up to and including August 10, 1911, for the leasing to the highest bidder, from August 16, 1911, for a period of not more than three years, of building No. 17 at Empire, owned by the Canal Zone Government. Rent to be payable monthly. The building is of French construction, two stories, and contains, in all, fifteen rooms, with a small outhouse. Bids should be in an envelope marked, "Bids for a lease to building No. 17 at Empire."

TOM M. COOKE, *Collector of Revenues.*

July Rainfall for Three Years.

STATION.	1909	1910	1911	Station Average	Years of Record	Rai'y days 1911
Pacific Section–						
Ancon	9.01	9.26	5.78	8 02	15	17
Balboa	14.92	8.99	7,12	9.88	13	17
Miraflores	10.27	11.31	6.83	9.47	3	22
Pedro Miguel	9.19	8.95	6.36	8.51	4	17
Rio Grande	8.13	15.78	7.00	11.31	7	19
Central Section–						
Culebra	7.95	16.38	5.95	9.50	20	18
Camacho	8.68	16 17	6.62	10.87	5	18
Empire	8.27	12.60	4.00	9.35	7	18
Gamboa	11.59	17.00	7.26	10.32	31	17
Alhajuela	13.64	16 99	8.84	13.47	13	15
El Vigia	14.09	15.17	8.76	12.67	3	17
Gorgona	11.16	13.48	6.45	11.30	8	16
San Pablo	10.63	18.30	5.35	10.84	5	18
Tabernilla	10.78	15.44	4.37	9.22	5	19
Bohio	11.07	10.82	7.29	13.01	17	19
Trinidad	10.78	14.91	3 63	8.94	4	14
Monte Lirio	15.63	19.87	10.58	14.76	4	25
Atlantic Sec.–						
Gatun	11.46	19.04	6.66	12.51	6	20
Brazos Brook	12.23	22.01	14.04	16.88	6	25
Cristobal	12.83	21.07	14.58	16.46	41	22
Porto Bello	26.33	22.80	14.48	18.40	4	23
Nombre de D.	16.94	17.10	9.10	14.38	3	21

Rainfall from July 1 to July 31, 1911, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
*Chorrera	90	8	5.45
Ancon	2.06	23	5.78
Balboa	3 33	3	7 12
*Miraflores	1.70	6	6.83
Pedro Miguel	1 50	6	6.36
Rio Grande	1 45	6	7.00
Central Section—			
Culebra	1.29	6	5.95
*Camacho	1.11	6	6.62
Empire	.77	6	4.00
Gamboa	1.95	8	7.26
*Juan Mina	2.40	6	8.47
Alhajuela	3.92	5	8.84
*El Vigia	4.20	5	8.76
*Gorgona	1.64	8	6.45
San Pablo	1.68	6	5.35
Tabernilla	1.01	6	4.37
Bohio	2.28	5	7.29
*Trinidad	1.10	4	3 63
*Monte Lirio	2.93	5	10.58
Atlantic Section—			
Gatun	1.60	5	6.66
*Brazos Brook	3.97	5	14.04
Cristobal	3.88	5	14.58
Porto Bello	3.85	28	14.48
*Nombre de Dios	3.36	11	9.10
*Bocas del Toro	2.68	28	18.63

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

WEATHER CONDITIONS, CANAL ZONE, JULY, 1911.

Except for the first 10 days of the month, during which heavy rains occurred, July weather on the Isthmus was very similar to ordinary dry season weather. The rainfall shows a marked deficiency in all sections of the Canal Zone, but was not the lowest of record for the month. The accumulated fall since January 1 also has been below normal. Temperatures and wind movement were the highest of record for the month of July, while the atmospheric pressure and relative humidity were well below normal. There was also a general deficiency in cloudiness. A tabular statement of weather conditions for July, follows:

STATIONS.	Press're (reduc'd to mean of 24 hours.)	Temperature.					Mean relative humidity.	Precipitation.			Wind.				
		Mean.	Maximum.	Date.	Minimum.	Date.		Total inches.	Station average.	Number of rainy days.	Total movement (in miles.)	Prevailing direction.	Max. velocity (in miles.)	Direction.	Date.
Cristobal	29.842	81.1	85	25	73	2	86	14.58	16.46	22	7,233	N.	27	N.	5
Culebra	29.829	80.8	92	20	70	30	90	5.95	9 50	18	5,912	N.W.	25	N.W	23
Ancon	29.819	82.2	94	20	71	30	88	5.78	8.02	17	5 692	N.W	25	E.	23

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

Mr. F. C. Freeman, superintendent of clubhouses since December, 1909, and connected with the clubhouse and Y. M. C. A. work on the Isthmus since September, 1907, leaves on August 12, for the States, and his resignation will become effective upon the expiration of six weeks' leave. He will be succeeded as superintendent by Mr. A. B. Dickson, at present secretary of the Empire clubhouse.

EMPIRE.

The following high scores were rolled during the week: Bigpins—Parkis, 200; Pearson, 202; Pearce, 203; Luttrell, 201; Gorham, 211; Gustavson, 202. Duckpins—Rodeghiero, 113; Scull, 105, 107; Pinney, 101.

There will be an informal song service on Sunday evening, August 13, at 9 o'clock. The public is invited to attend. Familiar songs, both sacred and secular, will be sung.

The ladies' club will hold a musicale in the hall of the clubhouse on Thursday afternoon at 3 o'clock.

The topic for discussion in the literary and debating society on August 11, will be "Recent events among the lawmakers at Washington." All men of Empire are invited to attend, and to join the society.

Gymnasium classes are now meeting on Mondays and Thursdays. These classes are the largest in the history of the clubhouse.

GORGONA.

At a dinner and conference at the I. C. C. hotel on Monday night, July 31, the membership committee made plans for a membership campaign, and divided its members into four competing teams, headed by F. G. Swanson, R. C. Shady, Tom Ryan, and C. S. Perry. The team securing the largest number of new members is to be tendered a dinner and "smoker."

On Thursday night, August 3, after the regular gymnasium class, an informal social was given the members, refreshments being served. An organization was formed, with C. Patterson, as president, to conduct informal social affairs of a similar nature, to be held after gymnasium class at intervals of every two weeks. A committee of two was appointed to arrange for the next one.

Mr. N. L. Robinson has contributed a year's subscription to the Geographic Magazine to the Y. M. C A. reading room.

The high bowling scores for the week ending August 5, are, as follows: Duckpins—Haggarty, 117; Bornefeld, 103; Berglund, 103; Duensing, 113, 106. Bigpins—Humphrey, 208, 206.

GATUN.

During the month of July, 52 different men rolled duckpins, 29 rolled tenpins, 19 rolled over 100 in duckpins, 5 rolled 200, or over, in tenpins. There were 72 games of 100, or over, in duckpins. L. Durand won a pennant for the single high score of 231 in tenpins. Luckey and Barte won pennants for 419 points scored in the two-man contest. DePoorter and Bailey tied in duckpins, with 115 points. DePoorter was winner when the tie was played off.

Gymnasium work was started on Tuesday night. Class work will be given twice a week in marching, calisthenics, and recreative games.

The chess and checker club will meet on Friday night. The games of the preliminary tournament will close on Saturday night.

CRISTOBAL.

The literary and debating club has a debate on August 2, "Resolved, that the labor union should be encouraged." The subject for August 9 is "Resolved, that vivisection be continued for the good of humanity."

The regular gymnasium classes meet Tuesday and Thursday nights at 8 p. m., since the close of the league basketball series.

A boys' department tournament in tenpins opened on Friday night, August 4.

The following is the standing of men who completed the "Strawberry" bowling tournament on July 31:

	Won.	Lost.	P. C.
Collins	31	11	.738
Louch	30	12	.714
Barrett	28	14	.667
Blackburn	28	14	.667
Rigney	27	15	.642
Rosteck	27	15	.642
Grover	27	15	.642
Wheeler	24	18	.571
Howard	20	22	.476
Gibson	14	28	.333

Collins and Louch will be awarded mineralite bowling balls.

Last Saturday night, the C and E A team defeated the "all stars," two out of three games in tenpins.

High scores for the week ending August 5 were, as follows:

Duckpins—J. Burgoon, 100; Smith, 104; Wood, 100; Hess, 102, 100, 109; Wheeler, 108, 105, 104, 109; Louch, 100; Jacques, 103; Claherty, 108.

Tenpins—Gibson, 220, 220, 210, 235; Collins, 212, 211; Louch, 204, 204, 219; Furlong, 200, 211; Bullard, 215; Blackburn, 209.

The local tenpin handicap tournament will start this week.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, August 5, 1911. All heights are in feet above mean sea level.

Day and Date.	Station.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun., July 30	126 0	92.6	45.3	13.6	13.6
Mon., July 31	126.0	92.6	45.2	13.5	13.5
Tues., Aug. 1	128.3	94.0	46 6	13 4	13.4
Wed., Aug. 2	128.3	94.3	47.0	13.6	13.6
Thurs., Aug. 3	126 7	93.2	45.9	13.6	13 6
Fri., Aug. 4	126.3	92.8	45.6	13.7	13.6
Sat., Aug. 5	128.5	94.4	46.7	13 6	13.6
Height of low water	125.0	92.0	44.0		

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending August 16, 1911, (75th meridian time):

Date.	Low.	High.	Low.	High.	Low.
	A.M.	A.M.	A.M.	P.M.	P.M.
August 10	......	4.04	10.13	4.12	10.30
August 11	......	4.36	10.50	4 48	11.07
August 12	......	5.10	11.25	5.22	11.41
August 13	......	5.44	P.M. 12.02	5.58	......
August 14	12.17	6.20	12.40	6.37	......
August 15	12.55	6.58	1.21	7.15	......
August 16	1.35	7.38	2 03	8.00	......

Cold Storage Prices Unchanged.

The prices of cold storage articles, published in The Canal Record of August 2, remain unchanged.

Lost.—Child's silver ring, green stone, on July 25, between Gorgona and Empire stations. Finder please communicate with Edward W. Rudd, Gorgona, C. Z.

CLASSIFIED EXPENDITURES.

A statement of classified expenditures of the Isthmian Canal Commission to June 30, 1911, follows:

Periods.	Department of Civil Administration	Department of Sanitation.	Department of Construction and Engineering	General Items.	Total.
Total to June 30, 1909	3,427,090.29	9,673,539.28	69,622,561.42	78,022,606.10	160,745,797.09
Total, fiscal year, 1910	709,351.37	1,803,040.95	26,300,167.05	2,863,088.83	31,675,648.20
July, 1910	58,474.88	156,006.64	2,216,849.78	280,015.85	2,711,317.15
August, 1910	63,887.05	164,220.65	2,348,777.07	336,961.35	2,913,846.12
September, 1910	60,586.46	153,433.27	2,516,814 41	236,170.76	2,967,004.90
October, 1910	37,250.26	146,587.47	2,565,042.28	295,537.33	3,044,417.34
November, 1910	71,981.80	137,912.89	2,356,292.01	233,587.25	2,799,773.95
December, 1910	69,424.73	144.754.71	2,480,221.44	179,047.95	2.873,448.83
January, 1911	71,426.87	137,665.14	2,202.370.20	235,678.30	2,647,140.51
February, 1911	69,886.61	127,198.56	2,172,805.21	173,109.54	2,542,999.92
March, 1911	74,670.20	130,694.38	2,641,274.42	460 607.91	3,307,246.91
April, 1911	74,198.25	126,588.34	2,129,806.54	115,705.55	2,446,298.68
May, 1911	71,266.08	134,786 71	1,875,080.72	200,748.85	2,281,882.36
June, 1911	32,0 6.25	157,943.86	1,958,067.23	365,163.96	2,513,201.30
Total	4,891,521 10	13,194,372.85	123,386,129.78	83,998,029.53	225,470,053.26

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to changes

NEW YORK TO CRISTOBAL.

Allianca	P. R. R.	Saturday	Aug. 5
Ancon	P. R. R.	Thursday	Aug. 10
Panama	P. R. R.	Saturday	Aug. 12
Advance	P. R. R.	Friday	Aug. 18
Colon	P. R. R.	Thursday	Aug. 24
Allianca	P. R. R.	Wednesday	Aug. 30
Panama	P. R. R.	Tuesday	Sept. 5
Advance	P. R. R.	Monday	Sept. 11
Colon	P. R. R.	Monday	Sept. 18
Allianca	P. R. R.	Saturday	Sept. 23
Panama	P. R. R.	Friday	Sept. 29
Advance	P. R. R.	Thursday	Oct. 5
Colon	P. R. R.	Thursday	Oct. 12

CRISTOBAL TO NEW YORK.

Colon	P. R. R.	Saturday	Aug. 12
Cristobal	P. R. R.	Saturday	Aug. 12
Allianca	P. R. R.	Friday	Aug. 18
Panama	P. R. R.	Thursday	Aug. 24
Advance	P. R. R.	Wednesday	Aug. 30
Colon	P. R. R.	Tuesday	Sept. 5
Allianca	P. R. R.	Monday	Sept. 11
Panama	P. R. R.	Sunday	Sept. 17
Advance	P. R. R.	Saturday	Sept. 23
Colon	P. R. R.	Saturday	Sept. 30
Allianca	P. R. R.	Friday	Oct. 6
Panama	P. R. R.	Thursday	Oct. 12
Advance	P. R. R.	Tuesday	Oct. 17

NEW YORK TO COLON.

Santa Marta	U. F. C.	Thursday	Aug. 3
Prinz Sigismund	H.-A.	Friday	Aug. 4
Thames	R. M.	Saturday	Aug. 5
Metapan	U. F. C.	Thursday	Aug. 10
Prinz Joachim	H.-A.	Saturday	Aug. 12
Zacapa	U. F. C.	Thursday	Aug. 17
Prinz Eitel Friedrich	H.-A.	Friday	Aug. 18
Trent	R. M.	Saturday	Aug. 10
Almirante	U. F. C.	Thursday	Aug. 24
Prinz Aug. Wilhelm	H.-A.	Saturday	Aug. 26
Oruba	R. M.	Saturday	Sept. 2
Santa Marta	U. F. C.	Thursday	Aug. 31
Prinz Sigismund	H.-A.	Friday	Sept. 1
Metapan	U. F. C.	Thursday	Sept. 7
Prinz Joachim	H.-A.	Saturday	Sept. 9

COLON TO NEW YORK.

Almirante	U. F. C.	Thursday	Aug. 10
Prinz Aug. Wilhelm	H.-A.	Tuesday	Aug. 15
Santa Marta	U. F. C.	Thursday	Aug. 17
Prinz Sigismund	H.-A.	Saturday	Aug. 19
Oruba	R. M.	Tuesday	Aug. 22
Metapan	U. F. C.	Thursday	Aug. 24
Prinz Joachim	H.-A.	Tuesday	Aug. 29
Zacapa	U. F. C.	Thursday	Aug. 31
Prinz Eitel Friedrich	H.-A.	Saturday	Sept. 2
Clyde	R. M.	Tuesday	Sept. 5
Almirante	U. F. C.	Thursday	Sept. 7
Prinz Aug. Wilhelm	H.-A.	Tuesday	Sept. 12
Santa Marta	U. F. C.	Thursday	Sept. 14

NEW ORLEANS TO COLON.

Atenas	U. F. C.	Saturday	Aug. 5
Turrialba	U. F. C.	Saturday	Aug. 12
Abangarez	U. F. C.	Saturday	Aug. 19
Atenas	U. F. C.	Saturday	Aug. 26
Turrialba	U. F. C.	Saturday	Sept. 2
Abangarez	U. F. C.	Saturday	Sept. 9

COLON TO NEW ORLEANS.

Abangarez	U. F. C.	Thursday	Aug. 10
Atenas	U. F. C.	Thursday	Aug. 17
Turrialba	U. F. C.	Thursday	Aug. 24
Abangarez	U. F. C.	Thursday	Aug. 31
Atenas	U. F. C.	Thursday	Sept. 7
Turrialba	U. F. C.	Thursday	Sept. 14

Hamburg-American steamers leave Colon for New York via Kingston at 10 a. m. on sailing dates. The *Prinz August Wilhelm* and *Prinz Joachim* call at Santiago de Cuba, on both outward and homeward voyages.

The Leyland line steamer *Etonian* sails for Port Limon and New Orleans on, or about, August 26.

Royal Mail steamers leave for New York on alternate Tuesdays, at 10 a. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships for New York via Kingston on Thursdays at 11 a. m.; for Bocas del Toro on Mondays at 6 p. m.

STATEMENT OF

CONSTRUCTION EXPENDITURES

TO JUNE 30, 1911

(Part II of The Canal Record, August 9, 1911.)

STATEMENT OF CONSTRUCTION EXPENDITURES TO JUNE 30, 1911.

Table No. 1.

Includes administrative and general expenses, but does not include general items or expenditures for sanitation, hospitals, or civil government.

Items.	Fourth Quarter, Fiscal Year 1911.			To March 31, 1911			Total to June 30, 1911.		
	Quantities.	Amount.	Unit Cost.	Quantities.	Amount.	Unit Cost.	Quantities.	Amount.	Unit Cost.
Atlantic Division—	*Cubic Yards.*			*Cubic Yards.*			*Cubic Yards.*		
1 Dry excavation, prism	188,669	$113,244.03	$0.6002	1.568,457	$1,071,393.50	$0.6831	1,757,126	$1,184,637.53	$0.6742
2 Hydraulic excavation, prism	14,350	5,224.61	.3641	14,255	$3.640.16	.2554	28,605	8,864.77	0.3099
3 Dredging excavation, prism	1,444,450	348,520.65	.2413	22,527,678	5,299,054.13	.2352	23,972,128	5,647,574.78	0.2356
Gatun Spillway—									
4 Dry excavation				1,544,202	1,096,180.59	$0.7099	1544,202,	1,096,180.59	0.7099
5 Preparing foundations	3,944	10,612.94	$2.6909	33,024	65,166.95	1.9733	36,968	75,779.89	2.0499
6 Masonry	12,655	85,789.73	6.7791	131,092	1,063,499.40	8.1126	143,747	1,149,289.13	7.9952
7 Ironwork		10,495.21			9,335.98			19,831.19	
8 Back filling	5,717	6,584.95	1.1518	8,937	1,508.28	.1688	14,654	8,093.23	.5523
Total		$113,482.83			$2,235,691.20			$2,349,174.03	
Gatun Dam—									
9 Dredging excavation				38,425	$20,041.19	$0.5216	38,425	$20,041.19	$0.5216
10 Dry filling	640,877	$293,219.15	$0.4575	6,812,850	2,748,291.78	.4034	7,453,727	3,041,510.93	.4081
11 Hydraulic filling	1,220,014	266,212.49	.2182	6,689,601	1,829,236.75	.2734	7,909,615	2,095,449.24	.2649
12 Paving				40,411	14,719.69	.3642	40,411	14,719.69	.3642
Total		$559,431.64			$4,612,289.41			$5,171,721.05	
Gatun Locks—									
13 Dry excavation		*$5,783.05		4,555,395	$3,089,734.63	$0.6783	4,555,395	$3,083,951.58	$0.6770
14 Dredging excavation		3,235.15		488,533	89,476.27	.1830	488,533	92,711.42	.1898
15 Preparing foundations, excavation	42,596	82.501.71	$1.9369	143,829	280,740.19	1.9519	186,425	363,241.90	1.9485
16 Preparing foundations, filling		*6.61		40,117	15,233.34	.3797	40,117	15,226.73	.3796
17 Preparing foundations, concrete piling, (lineal feet)	8,196	18,764.75	2.2895				8,196	18,764.75	$2.2895
18 Masonry	190,510	1,290.025.15	6.7714	1,234,430	8,973,744.97	7.2695	1,424,940	10,263,770.12	7.2029
19 Ironwork		205,645.62			775,216.84			980,862.46	
20 Back filling	193,284	65,658.95	.3397	346,575	253,209.26	.7306	539,859	318,868.21	.5906
21 Filling center wall	2,717	3,101.25	1.1414				2,717	3,101.25	1.1414
Total		$1.663,142.92			$13,477,355.50			$15.140,498,42	
Gatun-Mindi Levee—									
22 Dry fill				177,158	$68,985.15	$0.3894	177,158	68,985.15	$0.3894
23 Hydraulic fill				20,398	3,483.32	.1708	20,398	3,483.32	.1708
Total					$72,468.47			$72,468.47	
24 Colon breakwater	125,897	$86,748.50	$0.6890	233,993	$578,634.15	$2.4729	359,890	$665,382.65	1.8488
Total construction cost, Atlantic Division		$2,889,795.18			$27,350,526.52			$30,240,321.70	
25 Plant and equipment to be absorbed in construction costs after June 30, 1911								$3,620,051.46	
Total expenditure, Atlantic Division								$33,860,373.16	
Central Division—									
26 Dry excavation, prism	4,278,626	$2,693,027.61	$0.6294	73,059,609	64,299,578.91	$0.8801	77,338,235	$66,992,606.52	$0.8662
27 Clearing Canal line, without excavation	acres 70	277.59	$3.9656	acres 2210	139,038.82	$62.9134	acres 2,280	139,316.41	61.1037
28 Dredging excavation					9,798.40			9,798.40	
29 Masonry	146	2,045.71	14.0117	874	4,178.73	4.7811	1,020	6,224.44	6.1024
Total construction cost, Central Division		$2,695,350.91			$64,452,594.86			$67,147,945.77	
30 Plant and equipment to be absorbed in construction costs after June 30, 1911								$790,169.02	
Total expenditures, Central Division								$67,938,114.79	
Pacific Division—									
31 Dry excavation, prism	154,775	$126,668.70	$0.8184	283,168	$235,493.23	$0.8316	437,943	$362,161.93	$0.8270
32 Dredging excavation, prism	1,458.049	266,065.03	.1825	27,128,923	6,780,190.14	.2499	28,586,972	7,046,255.17	.2465
33 Hydraulic excavation, prism	105,720	90,062.81	.8519	91,957	39,739.45	.4322	197,677	129,802.26	.6566
Pedro Miguel Dam—									
34 Dry excavation				4,074	$6,167.28	$1.5138	4,074	$6,167.28	$1.5138
35 Dry filling		$4,637.91		260,852	121,363.91	4653	260,852	126,001.82	.4830
Total		$4,637.91			$127.531.19,			$132,169.10	
Pedro Miguel Locks—									
36 Dry excavation	4,536	$4,030.10	$0.8885	1,030,544	$994,676.01	$0.9652	1,035,080	$998,706.11	$0.9649
37 Preparing foundations	8,693	22,339.25	2.5698	113,102	323,850.34	2.8633	121,795	346,189.59	2.8424
38 Masonry	66,013	378,093.60	5.7276	599,043	3,212,692.04	5.3630	665,056	3,590,785.64	5.3992
39 Ironwork		29,016.73			490,384.33			519,401.06	
40 Back filling	94,670	41,202.94	.4352	188,655	77,186.60	.4091	283,325	118,389.54	.4179
Total		$474,682.62			$5,098,789.32			$5,573,471.94	
Miraflores Dams and Spillway—									
41 Dry filling	125,607	$49,419.99	$0.3934	690,892	$394,527.44	$0.5710	816,499	$443,947.43	$0.5437
42 Hydraulic filling		13,548.54			9,191.76			22,740.30	
43 Masonry, core wall					429.51			429.51	
44 Dry excavation				14,536	19,991.26	1.3753	14,536	19,991.26	1.3753
Total		$62,968.53			$424,139.97			$487,108.50	
Miraflores Locks—									
45 Dry excavation, diversions				5,885	$2,028.98	$0.3448	5,885	$2,028.98	$0.3448
46 Dry excavation, in locks	170,559	$134,270.92	$0.7872	1,427,276	1,488,458.62	1.0429	1,597,835	1,622,729.54	1.0156
47 Dredging excavation				309,647	142,379.66	.4598	309,647	142,379.66	.4598
48 Hydraulic excavation				332,703	195,299.02	.5870	332,703	195,299.02	.5870
49 Preparing foundations	5,190	19,482.20	3.7538	196.598	370,060.57	1.8823	201.788	389,542.77	1.9305
50 Masonry	101,448	483,033.96	4.7614	173,115	894,236.32	5.1656	274,563	1,377,270.28	5.0162
51 Ironwork		96,329.28			446,698.68			543,027.96	
52 Back filling	38,716	18,326.74	.4734	545,096	109,167.05	.2003	583,812	127,493.79	.2184
Total		$751,443.10			$3,648,328.90			$4,399,772.00	

*Indicates credit.

Table 1—(*Continued.*)

Items.	Fourth Quarter, Fiscal Year, 1911.			To March 31, 1911.			Total to June 30, 1911.		
	Quantities.	Amount.	Unit Cost.	Quantities.	Amount.	Unit Cost.	Quantities.	Amount.	Unit Cost.
La Boca Locks and Doms (abandoned)—									
53 Dry excavation				78,233	$158,343.29	$2.0240	78,233	$158,343.29	2.0240
54 Construction ,dam					315,350.07			315,350 07	
55 Construction, locks					159,306.40			159,306.40	
Total					$632,999.76			$632,999.76	
56 Naos Island breakwater		$6,649.41			$51,456.65			$58,106 06	
Total construction cost, Pacific Division		$1,783,178.11			$17,038,668.61			$18,821,846.72	
57 Plant and equipment to be absorbed in construction costs after June 30, 1911								$2,765,795.11	
Total expenditures, Pacific Division								$21,587,641.83	
Total expenditures, constr. and engr'n'g								$123,386,129.78	

Item 24—*Colon Breakwater.* The low cost for the quarter is due to the return to the storehouse of piling and timber, which had been previously charged to the work, but not used.

Item 28—*Dredging Excavation, prism.* Preliminary surveys.

Item 32—*Dredging Excavation, prism.* With the accounts for the month of April, the total cost of the dredging plant had been absorbed into the work; hence no arbitrary for plant is charged in this quarter.

Item 42—*Miraflores Dams and Spillway.* Hydraulic filling. Expenditures represent cost of pipe lines, flumes, etc., 582,732 cubic yards have been deposited in Dam from dredging and hydraulic excavations in lock chamber and in prism below the locks, the total expenditures therefor being charged to "excavation."

Items 53, 54, and 55. These expenditures were incurred prior to the adoption of Miraflores as the site for the lower locks and dams, at the Pacific entrance of the Canal.

Items 25, 30, and 57—*Plant.* The expenditures for plant and equipment are absorbed into construction costs on the basis of estimated total cost of plant, and the estimated quantities of work to be done. The amount under these items represent the balances which are to be absorbed into construction costs after June 30, 1911.

General—When excavated material is used in filling, such as dams, back filling, etc., the cost of dumping only is charged to the items benefited, all other expenses being charged to "excavation."

DAM CONSTRUCTION.

Table No. 2.

Detailed cost per cubic yard for quarter ending June 30, 1911:

Items.	Gatun Dam.				Miraflores Dam.			
	April.	May.	June.	Total.	April.	May.	June.	Total.
Dry Fill—Quantities—cubic yards	205,130	207,751	227,996	640,877	67,260	30,032	28,315	125,607
Excavation	$0.0279	$0.0255	$0.0287	$0.0274				
Clearing site	.0007	.0005	.0006	.0006				
Tracks	.0473	.0537	.0332	.0444	$0.0293	$0.0889	$0.0619	$0.0509
Trestles	.0134	.0013	.0018	.0054				
Transportation	1358	.1113	1149	.1204	.0397	.0634	0627	.0505
Filling	.0900	.0922	.0848	.0888	.0354	.0983	.1125	.0678
Maintenance of equipment	.0456	.0259	.0274	.0327	.0074	.0284	.0435	.0206
Plant arbitrary	.0979	0946	.0966	.0963	.1700	.1700	.1700	.1700
Division expense	.0112	.0120	.0127	.0120	.0052	.0145	.0139	.0094
Total division cost	$0.4698	$0.4170	$0.4007	$0.4280	$0.2870	$0.4635	$0.4645	$0.3692
Administrative and general expense	.0316	.0357	.0219	.0295	.0163	.0385	.0281	0242
Total cost	$0.5014	$0.4527	$0.4226	$0.4575	$0.3033	$0.5020	$0.4926	$0.3934
Hydraulic Fill—Quantities—cubic yards	368,658	419,348	432,008	1,220,014				
Clearing site	$0 0007	$0.0005	$0.0006	$0.0006				
Clearing for dredge	.0123	.0070	.0034	.0073				
Dredging	0693	.0685	.0678	.0684				
Relay pumps	0088	.0139	.0077	.0102				
Pipe lines	.0084	.0110	.0449	.0222				
Wood flumes	.0018	.0026	.0428	.0024				
Power	.0374	.0450	.0028	.0419				
Small boats	.0023	.0015	.0016	.0018				
Maintenance of equipment	.0194	†.0672	.0325	†.0057				
Plant arbitrary	.0500	.0500	.0500	.0500				
Division expense	.0045	.0042	.0044	.0044				
Total division cost	$0.2149	$0.1370	$0.2585	$0.2035				
Administrative and general expense	.0151	.0140	.0150	.0147				
Total cost	$0.2300	$0.1510	$0.2735	$0.2182				

Items.	Colon Breakwater.			
	April.	May.	June.	Total.
Excavation—Quantities—Cubic yards	40,699	38,534	46,664	125,897
Surveys	$0.0254	$0.0192	$0.0036	$0.0155
Clearing	†**.0045**		.0024	†**.0006**
Drilling	.0545	.0655	.0310	.0491
Blasting	.2761	.2803	.2028	.2502
Loading by power	.1191	.0569	.0652	.0801
Tracks	.4132	.0203	.0785	.1689
Transportation	.1135	.1174	.1039	.1111
Maintenance of equipment	.0330	.0900	.0658	.0626
Total	$1.0303	$0.6496	$0.5532	$0 7369

Items.	Colon Breakwater—*Cont'd.*			
	April.	May.	June.	Total.
Filling—Quantities—Cubic yards	40,699	38,534	46,664	125,897
Trestles	$0.1661	†**2.0907**	$0.2441	†**$0.4957**
Dumping	.0215	.0272	.0116	.0196
Maintenance of equipment	.0171	.0165	.0148	.0160
Total	$0.2047	†**$2.0470**	$0.2705	†**$0.4601**
Plant arbitrary	$0.1690	$0.1690	$0.1690	$0.1690
Division expense	.0378	.0384	.0347	.0534
Tug service	.0691	.0643	.0309	.0369
Total division cost	$1.5109	†**$1.1257**	$1.0583	$0.5361
Administrative and general expenses	.2046	.1569	.1046	.1529
Grand total	$1.7155	†**$0.9688**	$1.1629	$0.6890

*Credit under trestles in May is due to material, already charged into the work, being returned to Quartermaster's Department. This was done in order to determine the actual cost to May 31, 1911.

†Indicates credit.

LOCKS AND SPILLWAYS CONSTRUCTION.

Table No. 3.

Detailed cost per cubic yard for quarter ending June 30, 1911:

Items.	Gatun Spillway.				Gatun Locks.				Pedro Miguel Locks.				Miraflores Locks.			
	April.	May.	June.	Total.	April.	May.	June.	Total.	April.	May.	June.	Total.	April.	May.	June.	Total.
Dry excavation—Quantities—cubic yards											4,536	4,536	77,521	56,295	36,743	170,559
Drilling											$0.0871	$0.0871	$0.0381	$0.1233	$0.1199	$0.0839
Blasting											.0041	.0041	.0813	.0510	.0652	.0678
Loading by power											.2221	.2221	.0993	.1221	.1054	.1081
Tracks											.1175	.1175	1515	.2138	.1730	.1767
Transportation											.1550	.1550	.0533	.0864	.0736	.0686
Dumps														.0227	.0587	.0201
Trestles																
Pumps											.0491	.0491		0391	.0290	.0192
Power																
Maintenance of equipment											.1399	.1399	.0436	.0520	.0890	.0562
Plant arbitrary											.0009	.0009	.0900	.0900	.0900	.0900
Division expense											.0379	.0379	.0163	.0321	.0322	.0249
Total division cost											$0.8136	$0.8136	$0.5734	$0.8325	$0.8360	$0.7155
Admin. and general expense											.0749	.0749	.0613	.0891	.0672	.0717
Total cost											$0.8885	$0.8885	$0 6347	$0.9216	$0.9032	$0.7872
Preparing foundations, excavation—Quantities—cubic yards.	1,778	2,051	115	3,944	23,186	14,685	4,725	42,596	255	5,520	2,918	8,693	2,230	1,680	1,280	5,190
Drilling	$0.0777			$0.0350	$0.1100	$0.1210	$0.2092	$0.1248	$4.8913	$0.2759	$0.4840	$0 4811	$0 7892	$0.9206	$0.2681	$0.7031
Blasting	.0301			.0135	.0883	.0989	.2806	.1133	.9515	.0668	.1589	.1237	.2062	.1657	.0169	.1464
Loading by power	†.2740	.2182	.9983	.0191	.1048	.1301	.1016	.1132	1.0446	.2767		.2064				
Loading by hand	.4310	1.2793	11.6028	1.1979	.2690	.2973	.9065	.3495	1.0351	.7267	1.1463	.8766	1.7823	1.7760	1.3966	1.6852
Tracks	.0195	.0213	.2978	.0286	.1325	.2480	.0085	.1635	3.3067	.0439	.2546	.2103	.0514	.1025	.0346	.0638
Transportation	.0435	.0206		.0303	.1853	.3166	.3495	.2438	.0631	.0484	.0377	.0452		.2877	.4234	.1975
Pumps		.0042		.0022	.2982	.1299	.1173	.2201	.0306	.0411	.0490	.0435	.0419	.0391	.0290	.0378
Maintenance of equipment	.0355	.2081	.9937	.1532	.1840	.2404	2292	.2084	.1097	.2553	.0675	.1880	.1386	.3171	.3186	.2408
Coffer dams	.2376	.6061	5.8043	.5915												
Plant arbitrary	.1190	.1190	.1190	.1190	.1190	.1190	.1190	.1190	.0033	.0095	.0009	.0065	.0900	.0900	.0900	.0900
Division expense	.0619	.1538	1.6020	.1546	.0698	.0761	.1507	.0810	.4890	.0889	.1357	.1163	.1832	.2026	.1316	.1768
Total division cost	$0.7818	$2.6306	21.4179	$2.3449	$1.5609	$1.7773	$2.4721	$1.7366	11.9249	$1.8332	$2.3346	$2.2976	$3.2828	$3.9013	$2.7088	$3.3414
Admin. and general expense	.1189	.4106	2.7043	.3460	.1842	.2061	.2608	.2003	1.4805	.2236	.2588	.2722	.4343	.4979	.2618	.4124
Total cost	$0.9007	$3 0412	24.1222	$2.6909	$1.7451	$1.9834	$2.7329	$1.9369	13.4054	$2.0568	$2.5934	$2.5698	$3.7171	$4.3992	$2.9706	$3.7538
Preparing foundations, concrete piling—Quantities—lin. ft.					2,544	5,424	228	8,196								
Concrete piles in place					$1.6712	$1.9814	10.5473	$2.1234								
Maintenance of equipment					.0861	.0291	.7611	.0679								
Division expense					.0050	.0115	.4125	.0207								
Total division cost					$1.7623	$2.0220	11.7209	$2.2120								
Admin. and general expense					.0694	.0369	1.1339	.0775								
Total cost					$1.8317	$2.0589	12.8548	$2.2895								
Masonry.																
Concrete—Quantities—cubic yds.	4,169	3,656	4,830	12,655	62,021	60,818	49,293	172,132	28,635	18,905	17,875	65,415	38,758	36154	26,536	101,448
Cement	$1.9118	$1.6243	$1.7286	$1.7588	$1.7466	$1.4229	$1.5919	$1.5879	$1.7282	$1.1894	$1.5756	$1.5307	$1.5457	$1.2126	$1.8819	$1.5149
Stone	1.6440	1.6915	1.7076	1.6820	1.8513	1.9407	1.9641	1.9152	.8000	.7812	.7812	.7894	.8184	.7812	.7812	.7954
Sand	.8328	.6247	.6766	.7130	.8087	.7019	.8946	.7955	.4089	.4042	.3901	.4025	.4089	.4042	.3901	.4023
Mixing	.3250	.2959	.2741	.2972	.1783	.1904	.1814	.1835	.2649	.2241	.3065	.2645	.4053	.3204	.3577	.3626
Total cost	$4.7136	$4.2364	$4.3869	$4.4510	$4.5849	$4.2559	$4.6320	$4.4821	$3.2020	$2.5989	$3.0534	$2.9871	$3.1783	$2.7184	$3.4109	$3.0752
Large Rock—Quantities—cubic yards					3,735	5,407	4,611	13,753			213	213				
Cost					$1.5588	$2.3514	$0.9705	$1.6732			$0.2808	$0.2865				
Masonry—Quantities—cubic yards	4,169	3,656	4,830	12,655	65,756	66,225	53,904	185,885	28,635	18,905	18,088	65,628	38,758	36,154	26,536	101,448
Concrete	$4.7136	$4.2364	$4.3869	$4.4510	$4.3245	$3.9085	$4.2357	$4.1505	$3.2020	$2.5989	$3.0174	$2.9774	$3.1783	$2.7184	$3.4109	$3.0752
Large rock					.0886	.1920	.0831	.1238			.0033	.0009				
Wood forms	.5776	1.0276	.5220	.6864	.4006	.4242	.4182	.4141	.8073	.5411	.5603	.6625	.3031	.2882	.7931	.4260
Steel forms					.1637	.1167	.1701	.1488	.0220	.0094	.0093	.0149	.0500	.0315	.0306	.0383
Placing	.4298	.6132	.4604	.4945	.3241	.3204	.3608	.3334	.4112	.5373	.4328	.4534	.1622	.2193	.2553	.2070
Reinforcements	.0006	.0020	.0933	.0364	.0068	.0452	.0126	.0222	.0171	.2026	.0692	.0849	.0187	.0585	.0552	.0424
Pumps	.0122			.0040	.0373	.1129	.0925	.0803	.0305	.0416	.0485	.0387	.0419	.0391	.0290	.0375
Power					.0661	.0826	.0497	.0672	.0416	.0588	.0406	.0463	.0111	.0218	.0397	.0224
Coffer dams	.2703	†.1546	.0461	.0620												
Maintenance of equipment	.2807	.0550	.1076	.1495	.2116	.1912	.3474	.2437	.1862	.2850	.2139	.2223	.1046	.1834	.2037	.1586
Plant arbitrary	.4670	.4670	.4670	.4670	.7110	.7110	.7110	.7110	.7172	.7362	.7140	.7218	.4100	.4100	.4100	.4100
Division expense	.1184	.0880	.0869	.0975	.0736	.0701	.0918	.0776	.0905	.1066	.1022	.0984	.0703	.0762	.1002	.0802
Total division cost	$6.8702	$6.3346	$6.1702	$6.4483	$6.4079	$6.1748	$6.5729	$6.3726	$5.5256	$5.1175	$5.2115	$5.3215	$4.3502	$4.0464	$5.3277	$4.4976
Admin. and general expense	.3157	.3289	.3453	.3308	.2390	.2493	.2744	.2530	.2887	.4032	.2964	.3238	.1828	.3107	.3182	.2638
Total cost	$7.1859	$6.6635	$6.5155	$6.7791	$6.6469	$6.4241	$6.8473	$6.6256	$5.8143	$5.5207	$5.5079	$5.6453	$4.5330	$4.3571	$5.6459	$4.7614
Masonry, reinforced—Quantities—cubic yards					1,605	1,619	1,401	4,625		230	155	385				
Cement					$2.3717	$1.9827	$2.1590	$2.1711		$2.0777	$3.0798	$2.4811				
Stone					1.5383	1.6859	1.7935	1.6673		.7816	.7479	.7680				
Sand					.5939	.6928	.9408	.7336		.4038	.3641	.3878				
Wood forms					1.3140	2.4803	4.3088	2.6295		6.4993	6.4076	6.4624				
Steel forms					.3503	.3712	.8967	.5231								
Mixing					.9018	1.2437	1.2891	1.1388		.2436	2.2706	1.0597				
Placing					.8059	1.0721	.8238	.9045		*	1.9612	.7896				
Reinforcements					.3928	.7686	.7558	.6343		1.0289	9.1199	4.2863				

†Indicates credit.

Table No. 3—*(Continued)*

ITEMS.	GATUN SPILLWAY.				GATUN LOCKS.				PEDRO MIGUEL LOCKS.				MIRAFLORES LOCKS.			
	April.	May.	June.	Total.	April.	May.	June.	Total.	April.	May.	June.	Total.	April.	May.	June.	Total.
Masonry,reinforced—(Continued)																
Maintenance of equipment	......	......	......	......	.0666	.2457	.1512	.1549	......	......	.0084	.0034	......	......	......	......
Plant arbitrary	......	......	......	......	.7110	.7110	.7110	.7110	......	.6900	.6900	.6900	......	......	......	......
Division expense	......	......	......	......	.2514	.2754	.3968	.3038	......	.6258	1.0941	.8143	......	......	......	......
Total division cost	......	......	......	......	$9.2977	11.5294	14.2265	11.5719	......	12.3507	25.7436	17.7426	......	......	......	......
Admin. and general expense	......	......	......	......	.7195	1.0826	1.4230	1.0597	......	1.6400	2.5546	2.0082	......	......	......	......
Total cost	......	......	......	......	10.0172	12.6120	15.6495	12.6316	......	13.9907	28.2982	19.7508	......	......	......	......
Total Masonry—Quantities—cubic yards	4,169	3,656	4,830	12,655	67,361	67,844	55,305	190,510	28,635	19,135	18,243	66,013	38,758	36,154	26,536	101,448
Total cost	$7.1859	$6.6635	$6.5155	$6.7791	$6.7272	$6.5718	$7.0702	$6.7714	$5.8143	$5.6224	$5.7016	$5.7276	$4.5330	$4.3571	$5.6459	$4.7614
Back filling—Quantities—cubic yards	595	1,292	3,830	5,717	77,880	65,608	49,796	193,284	61,379	14,420	18,871	94,670	6,540	16,021	16,155	38,716
Excavation	$1.2414	$0.0449	$0.0679	$0.1849	......	......	......	......	......	......	......	......	......	......	......	......
Blasting	......	......	......	......	......	$0.0011	$0.0003	$0.0013	......	......	......	......	......	$0.0044	......	$0.0018
Loading	......	......	......	......	$0.0222	.0270	.0250	.0237	......	$0.0020	$0.0236	$0.0050	......	.0076	$0.0022	.0041
Tracks	3.0818	.5523	.2324	.6012	.0429	.0447	.1425	.0692	$0.0609	.3505	.0246	.0978	$0.0015	.0057	.1323	.0578
Transportation	......	......	......	......	.0309	.0546	.0552	.0452	.0324	.0833	.0849	.0505	......	.0609	.0642	.0520
Filling	.0514	.1756	.1741	.1616	.0539	.0746	.1581	.0878	.0709	.1678	.2191	.1152	.2810	.1390	.1526	.1687
Maintenance of equipment	......	......	......	......	.0421	.0253	.0496	.0383	.0067	.0421	.0592	.0226	.0107	.0230	.0465	.0307
Plant arbitrary	......	......	.0227	.0152	.0241	.0292	.0193	.0246	.1000	.1000	.1000	.1000	.1000	.1000	.1000	.1000
Division expense	.2502	.0322	0312	.0542	.0103	.0114	.0255	.0146	.0073	.0280	.0180	.0126	.0198	.0157	.0195	.0180
Total division cost	$4.6248	$0.8050	$0.5283	$1.0171	$0.2264	$0.2679	$0.4755	$0.3047	$0.2782	$0.7737	$0.5294	$0.4037	$0.4130	$0.3563	$0.5173	$0.4331
Admin. and general expense	.6442	.1118	.0632	.1347	.0266	.0325	.0514	.0350	.0221	.0675	.0345	.0315	.0467	.0365	.0415	.0403
Total cost	$5.2690	$0.9168	$0.5915	$1.1518	$0.2530	$0.3004	$0.5269	$0.3397	$0.3003	$0.8412	$0.5639	$0.4352	$0.4597	$0.3928	$0.5588	$0.4734
Filling center wall—Quantities—cubic yards	......	......	......	......	......	......	2,717	2,717	......	......	......	......	......	......	......	......
Loading	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Tracks	......	......	......	......	......	......	$0.0084	$0.0084	......	......	......	......	......	......	......	......
Transportation	......	......	......	......	......	......	.8028	.8028	......	......	......	......	......	......	......	......
Filling	......	......	......	......	......	......	.2042	.2042	......	......	......	......	......	......	......	......
Maintenance of eqiupment	......	......	......	......	......	......	.0016	.0016	......	......	......	......	......	......	......	......
Plant arbitrary	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Division expense	......	......	......	......	......	......	.0464	.0464	......	......	......	......	......	......	......	......
Total division cost	......	......	......	......	......	......	$1.0634	$1.0634	......	......	......	......	......	......	......	......
Admin. and general expense	......	......	......	......	......	......	.0780	.0780	......	......	......	......	......	......	......	......
Total cost	......	......	......	......	......	......	$1.1414	$1.1414	......	......	......	......	......	......	......	......

*Placing of "Masonry reinforced" was charged to "Masonry" in May, no separate account having been kept.

DRY EXCAVATION—PRISM.

Table No. 4.

Detailed cost per cubic yard for quarter ending June 30, 1911:

ITEMS.	ATLANTIC DIVISION.				CENTRAL DIVISION.				PACIFIC DIVISION.			
	April.	May.	June.	Total.	April.	May.	June.	Total.	April.	May.	June.	Total.
Dry excavation—Quantities—cubic yards	74,030	58,982	55,657	188,669	1,485,039	1,300,463	1,401,016	4,186,518	45,864	33,445	75,466	154,775
Drilling	$0.0337	$0.0448	$0.0408	$0.0393	$0.0492	$0.0586	$0.0554	$0.0542	$0.0083	$0.0841	$0.0870	$0.0631
Blasting	......	.1057	.0652	.0523	.0670	.0792	.0576	.0676	.0528	.0329	.0478	.0461
Loading by power	.0649	.0717	.0601	.0656	.0535	.0559	.0421	.0504	.1153	.1464	.1171	.1229
Tracks	0580	.0489	.0493	.0526	.0773	.0853	.0821	.0814	.1731	.1522	.1300	.1475
Transportation	.0989	.1572	.1646	.1364	.0637	.0883	.0737	.0747	.0549	.1040	.0924	.0838
Dumps	......	......	......	......	.0437	.0449	.0440	.0442	.0257	.0497	.0454	.0405
Pumps	......	......	......	......	.0055	.0053	.0042	.0050	.0381	.0399	.0336	.0363
Maintenance of equipment	.0744	.0460	.0959	.0719	.0901	.1030	.1011	.0978	.0506	.0810	.0992	.0809
Plant arbitrary	.1190	.1190	.1190	.1190	.1000	.1000	.1000	.1000	.1011	.1037	.1002	.1012
Division expense	.0147	.0188	.0202	.0176	.0121	.0117	.0112	.0117	.0190	.0327	.0292	.0269
Total division cost	$0.4636	$0.6121	$0.6151	$0.5547	$0.5621	$0.6322	$0.5714	$0.5870	0.6389	$0.8266	$0.7819	$0.7492
Administrative and general expense	.0411	.0595	.0366	.0455	.0447	.0570	.0426	.0478	.0697	.0877	.0607	.0692
Total cost	$0.5047	$0.6716	$0.6517	$0.6002	$0.6068	$0.6892	$0.6140	$0.6348	$0.7086	$0.9143	$0.8426	$0.8184
Dry excavation—Prism, by contract—Quantities—cubic yards	......	......	......	......	31,400	28,420	32,288	92,108	......	......	......	......
Contract cost	......	......	......	......	$0.2120	$0.3503	$0.2966	$0.2843	......	......	......	......
Plant arbitrary	......	......	......	......	.1000	.1000	.1000	.1000	......	......	......	......
Total cost	......	......	......	......	.3120	.4503	.3966	.3843	......	......	......	......
Total dry excavation—Quantites—cubic yards	74,030	58,982	55,657	188,669	1,516,439	1,328,883	1,433,304	4,278,626	45,864	33,445	75,466	154,775
Unit cost	$0.5047	$0.6716	$0.6517	$0.6002	$0.6007	$0.6841	$0.6091	$0 6294	$0.7086	$0.9143	$0.8426	$0.8184

DREDGING EXCAVATION—PRISM.

Table No. 5.

Detailed cost per cubic yard for quarter ending June 30, 1911:

ITEMS.	ATLANTIC DIVISION.								PACIFIC DIVISION.							
	April.		May.		June.		Total.		April		May.		June.		Total.	
	Quantities, cu. yds.	Unit cost	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.	Quantities, cu. yds.	Unit cost.
Pipe lines																
Dykes																
Clearing	487,174	$0.0003					1,444,450	$0.0001	406,113	$0.0001						
Op'n, seagoing suction dredge	364,320	.0321	356,943	$0.0296	300,337	$0.0310	1,021,600	0309	176,521	0559	224,363	$0.0409	220,786	$0 0414	621,670	$0.0453
R'p'rs, seagoing suction dredge	364,320	.0073	356,943	.0057	300,337	.0138	1,021,600	.0087	176,521	0554	224,363	.0160	220,786	.0051	621,670	.0233
Operation, ladder dredges	76,072	1242	123,142	0746	81,036	.0992	280,250	0952	179,631	1055	221,629	0465	229,962	.0469	631,222	.0634
Repairs, ladder dredges	76,072	.0484	123,142	.0336	81,036	1149	280,250	.0611	179,631	0456	221,629	0423	229,962	†.0060	631,222	.0251
Operation, dipper dredges	37,782	.0904	34,093	1729	70,725	.1307	142,600	1301	49,961	1017	83,702	0545	71,494	.0677	205,157	.0706
Repairs, dipper dredges	37,782	.0390	34,093	2837	70,725	0720	142,600	1139	49,961	0373	83,702	0190	71,494	0513	205,157	.0347
Operation, pipe line dredges																
Repairs, pipe line dredges																
Op'n, tugs, clapets and scows	113,854	1422	157,235	0680	151,761	.0614	422,850	.0856	229,592	.0734	305,331	0573	301,456	0616	836,379	.0633
R'p'rs, tugs, clapets, and scows	113,854	.1084	157,235	.0526	151,761	.0476	422,850	.0658	229,592	.0298	305,331	0229	301,456	†.0080	836,379	.0137
Drilling	34,549	.0581	42,520	.0504	20,443	1429	97,512	.0725	20,563	.0144	23,190		3,050		46,803	.0063
Blasting	34,459	0886	42,520	.0691	20,443	3046	97,512	.1252	20,563	.0019	23,190		3,050		46,803	.0008
Operation, drill barges									20,563	.4766	23,190	4808	3,050	3,5938	46,803	.6818
Operation, rock breakers									20,563	.0691	23,190	.0631	3,050	4991	46,803	.0942
Small boats	478,174	.0027	514,178	.0016	452,098	.0031	1,444,450	0024	406,113	.0038	529,694	0023	522,242	0026	1,458,049	.0028
Repairs, misc. equipment	478,174	.0012	514,178	.0035	452,098	.0012	1,444,450	.0020	406,113	0042	529,694	0012	522,242	†.0008	1,458,049	.0013
Plant arbitrary	478,174	.0610	514,178	.0610	452,098	.0610	1,444,450	.0610								
Division expense	478,174	.0061	514,178	.0054	452,098	0185	1,444,450	.0061	406,113	.0061	529,694	0046	522,242	†.0011	1,458,049	.0030
Total division cost	478,174	$0.2333	514,178	$0.2023	452,098	$0 2335	1,444,450	$0.2221	406,113	$0.2333	529,694	$0 1509	522,242	$0 1089	1,458,049	$0.1588
Admin. and general expense	478,174	.0209	514,178	.0178	452,098	.0185	1,444,450	0191	406,113	.0357	529,694	.0227	522,242	.0153	1,458,049	.0237
Total cost	478,174	$0.2542	514,178	$0.2201	452,098	$0.2520	1,444,450	$0.2413	406,113	$0 2690	529,694	$0.1736	522,242	$0.1242	1,458,049	$0.1825
Earth excavation—per cent	443,625	92.77	471,658	91.73	431,655	95.48	1,346,938	93.25	385,550	94.94	506,504	95 62	519,192	99.42	1,411,246	96.79
Rock excavation—per cent	34,549	7.23	42,520	8.27	20,443	4.52	97,512	6.75	20,563	5.06	23,190	4 38	3,050	.58	46,803	3.21

NOTE—*The total cost of the Dredging Plant had been absorbed at the close of April, hence no charge appears for this quarter.
†Indicates credit.

STONE PRODUCTION.

Table No. 6.

Detailed cost per cubic yard for quarter ending June 30, 1911:

	PORTO BELLO QUARRY.				ANCON QUARRY.			
	April.	May.	June.	Total.	April.	May.	June.	Total
Quarrying—Quantities—cubic yards	68,746	58,483	60,704	187,933	58,279	58,893	62,997	*227,821
Stripping	$0.0259	$0.0173	$0.0029	$0.0158	$0 1010	$0.0684	$0.0442	$0.0557
Drilling	.0375	.0376	.0355	.0369	.0472	.0515	.0518	.0397
Blasting	.1373	.1810	.1701	.1615	0384	.0437	.0438	.0332
Loading	.0728	.0812	.0803	.0778	0477	.0437	.0347	.0331
Transportation	.0613	.0693	.0666	.0655	.0956	.0905	.0568	.0636
Tracks	.0220	.0727	.0400	.0436	0353	0268	.0347	.0256
Power	.0197	.0244	.0223	.0220				
Maintenance of equipment	.0542	.0945	.1189	.0876	.0616	.0252	.0324	.0312
Plant arbitrary	.3300	.3300	.3300	.3300	.2400	.2400	.2400	.2400
Total	$0.7607	$0 9080	$0.8666	$0.8407	$0.6670	$0.5898	$0.5384	$0.5221
Crushing—Quantities—cubic yards	68,746	58,483	60,704	187,933	58,279	58,893	62,997	227,821
Operation, crushers	$0.0246	$0.0360	$0.0266	$0.0288	$0.0225	$0.0200	$0.0164	$0.0155
Stone bins and conveyors	.0219	.0209	.0165	.0198	.0034	0051	.0037	.0032
Power	.0421	.0522	.0476	0470	.0147	.0206	.0207	.0148
Maintenance of equipment	.1212	.1068	.0939	.1079	.0352	.0292	.0643	.0343
Plant arbitrary	.1700	.1700	.1700	.1700	.0740	.0752	.0747	.0737
Total	$0.3798	$0.3859	$0.3546	$0.3735	$0.1498	$0.1501	$0.1798	$0.1415
Total cost of production	$1.1405	$1.2939	$1.2212	$1.2142	$0.8168	$0.7399	$0.7182	$0.6636
Towing—Quantities—cubic yards	68,746	58,483	60,704	187,933				
Operation, tugs and barges	$0.1833	$0.1675	$0.1594	$0.1706				
Maintenance and equipment	.1345	.1713	.1490	.1507				
Plant arbitrary	.1710	.1710	.1710	.1710				
Total	$0 4888	$0.5098	$0.4794	$0.4923				
Unloading—Quantities—cubic yards	68,746	58,483	60,704	187,933				
Operation, cableways and cranes	$0.1093	$0.1086	$0.1300	$0.1158				
Power	.0184	.0212	.0181	.0192				
Maintenance of equipment	.0627	.1180	.1056	.0937				
Plant arbitrary	.2070	.2070	.2070	.2070				
Total	$0.3974	$0.4548	$0.4607	$0.4357				
Rail transportation to storage—Quantities—cubic yards	24,115	20,996	21,529	66,640	58,729	58,893	62,997	227,821
Operation of trains	$0.0756	$0.1107	$0.0992	$0.0943	$0.0379	$0.0377	$0.0423	$0.0312
Repairs to tracks	.0149	.0137	.0129	.0139		.0095	.0023	.0031
Dumping in storage					.0081	.0068	.0104	.0067
Maintenance of equipment	.0806	.0727	.0701	.0747	.0061	.0136	.0274	.0126
Plant arbitrary					.0600	.0600	.0600	.0600
Total	$0.1711	$0.1971	$0.1822	$0.1829	$0.1121	$0.1276	$0.1424	$0.1136
Division expense	$0.0281	$0.0307	$0.0337	$0.0307	$0.0253	$0.0244	$0.0203	$0.0184
Total cost in storage	$2.1148	$2.3600	$2.2596	$2.2379	$0.9542	$0.8919	$0.8809	$0.7956

*NOTE—Under "Total Quantities" 47,652 cubic yards have been added, to adjust the difference between cross section measurements of stock pile and book balances. This amount was not added to monthly quantities.

SAND PRODUCTION.

Table No. 7.

Detailed cost per cubic yard for quarter ending June 30, 1911:

Items.	Nombre de Dios.				Chamé.			
	April.	May.	June.	Total.	April.	May.	June.	Total.
Dredging—Quantities—cubic yards	47,801	40,003	24,236	112,040	36,663	35,903	38,954	†124,372
Operation, dredges	$0.1548	$0.2188	$0.3057	$0.2103	$0.1265	$0.1091	$0.1170	$0.1054
Maintenance of equipment	.0129	.0085	.0538	.0202	.0464	.0255	.0338	.0316
Total	$0.1677	$0.2273	$0.3595	$0.2305	$0.1729	$0.1346	$0.1508	$0.1370
Plant arbitrary	$0.4800	$0.4800	$0.4800	$0.4800	$0.0300	$0.0300	$0.0300	$0.0300
Total cost of production	$0.6477	*$0.6945	$0.8395	*$0.7059	$0.2029	$0.1646	$0.1808	$0.1670
Towing—Quantities—cubic yards	47,801	40,003	24,236	112,040	36,663	35,903	38,954	124,372
Operation, tugs and barges	$0.1875	$0.1806	$0.2380	$0.1960	$0.1213	$0.1238	$0.1085	$0.1055
Maintenance of equipment	.1407	.1809	.1707	.1615	.0653	.0134	.0453	.0373
Plant arbitrary	.2110	.2110	.2110	.2110	.0700	.0700	.0700	.0700
Total	$0.5392	$0.5725	$0.6197	$0.5685	$0.2566	$0.2072	$0.2238	$0.2128
Unloading—Quantities—cubic yards	47,801	40,003	24,236	112,040	36,663	35,903	38,954	124,372
Operation, cableways and cranes	$0.1114	$0.1118	$0.1419	$0.1181	$0.0594	$0.0620	$0.0729	$0.0582
Power	.0162	.0192	.0157	.0172	.0312	.0308	.0273	.0267
Maintenance of equipment	.0571	.1104	.1045	.0864	.0603	.0417	.0383	.0418
Plant arbitrary	.1620	.1620	.1620	.1620	.1044	.1040	.1032	.1035
Total	$0.3467	$0.4034	$0.4241	$0.3837	$0.2553	$0.2385	$0.2417	$0.2302
Rail Transportation to Storage—Quantities—cubic yards	12,133	17,517	11,957	41,607	36,663	35,903	38,954	124,372
Operation of trains	$0.1342	$0.1107	$0.1034	$0.1155	$0.0487	$0.0517	$0.0473	$0.0441
Repairs to tracks	.0265	.0137	.0134	.0173	.0275	.0376	.0423	.0322
Dumping in storage	....	....	....	....	.0065	.0123	.0131	.0096
Maintenance of equipment	.1432	.0727	.0732	.0934	.0079	.0195	.0311	.0177
Plant arbitrary	....	....	....	....	.0800	.0800	.0800	.0800
Total	$0.3039	$0.1971	$0.1900	$0.2262	$0.1706	$0.2011	$0.2138	$0.1836
Division expense	$0.0061	$0.0065	$0.0125	$0.0290	$0.0131	$0.0152	$0.0160	$0.0132
Total lost in storage	$1.6168	$1.7632	$1.9895	$1.7497	$0.8985	$0.8266	$0.8761	$0.8068

*Dry excavation is credited with $515.25 in May on account of adjustment, but no yardage was accomplished. The total cost of production includes this amount and, for this reason, the cost of dredging, plus plant charge, does not equal total cost of production.

†NOTE.—Under "Total Quantities," 12,852 cubic yards have been added, to adjust the difference between cross section measurements of stock piles and book balances. This amount was not added to monthly quantities.

HYDRAULIC EXCAVATION—PRISM.

Table No. 8.

Items.	Atantic Division.				Pacific Division.			
	April.	May.	June.	Total.	April.	May.	June.	Total.
Quantities—cubic yards	5,350	5,500	3,500	14,350	33,509	18,353	53,858	105,720
Pumping station	....	....	....	....	$0.1794	$0.2815	$0.1036	$0.1585
Pipe lines and monitors	....	....	....	....	.1060	.1413	.0949	.1065
Dredging pumps	$0.1291	$0.3231	$0.5705	$0.3111	.1175	.1457	.0731	.0997
Relay pumps	....	....	....	....	....	....	....	....
Dykes	....	....	....	....	....	....	....	....
Maintenance of equipment	....	....	....	....	.0772	.0923	.0771	.0798
Power	....	....	....	....	.2614	.4482	.1919	.2584
Plant arbitrary	....	....	....	....	.0678	.0785	.0608	.0661
Division expense	.0076	.0142	.0318	.0161	.0230	.0336	.0146	.0206
Total division cost	$0.1367	$0.3373	$0.6023	$0.3272	$0.8323	$1.2211	$0.6160	$0.7896
Administrative and general expense	.0176	.0379	.0649	.0369	.0780	.1054	.0379	.0623
Total cost	$0.1543	$0.3752	$0.6672	$0.3641	$0.9103	$1.3265	$0.6539	$0.8519

MANUFACTURING CONCRETE PILES.

Table No. 9.

Items.	Atlantic Division.			
	April.	May.	June.	Total.
Quantities—lineal feet	10,002	5,904	5,760	21,666
Cement	$0.1024	$0.0828	$0.0760	$0.0900
Stone	.0750	.1176	.1145	.0971
Sand	.0178	.0255	.0080	.0173
Mixing	.0358	.1157	.0512	.0617
Placing	.0334	.0711	.0323	.0434
Reinforcements	.8584	.7276	.6346	.7734
Forms	.0922	.0344	.0786	.0729
Maintenance of equipment	.0053	.0054	.0114	.0069
Plant arbitrary	.1794	.1700	.1700	.1743
Division expense	.0114	.0170	.0210	.0155
Total cost	$1.4111	$1.3671	$1.1976	$1.3525

CANAL RECORD

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Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Equip Tugs for Fighting Fire.

It has been decided to install pumps and nozzles on two of the tugs of the Pacific Division at the Pacific entrance to the Canal, for the better protection against fire of the docks and other buildings at Balboa. At present, only one of the tugs, the *Bolivar*, of the Panama Railroad Company's service, has fire-fighting appliances.

Panama Railroad Relocation.

The contractor, J. B. Hull, who had the contract for excavating a section about one and one-half miles long on the relocated line of the Panama railroad, opposite Las Cascadas, has completed his work. Standard gage track has been laid from Gamboa to the crossing of the Sardanilla River, and, excepting about half a mile in this section, standard gage track has been laid the whole length of the new location between Gamboa and Paraiso. All of the track is not to grade. Work on the trestle over the Sardanilla River has been begun.

A 90-ton steam shovel has been set at work on the cut back of Paraiso replacing the 70-ton shovel that has been operating there. Four 70-ton shovels, and one 90-ton, are now working between Gamboa and Paraiso.

Canal Work in July.

The grand total of Canal excavation to August 1 was 145,486,536 cubic yards, leaving to be excavated 41,727,508 cubic yards, or less than one-fourth of the entire amount for the completed Canal. These figures are in accord with the new estimate of July 1, 1911, when 4,676,278 cubic yards were added to the estimate of July, 1910, to include material in the slides in the banks of Culebra Cut, making the total excavation for the entire Canal 187,214,044 cubic yards.

The total for July was 2,518,982 cubic yards, as compared with 2,406,288 cubic yards in July, 1910, and 2,843,260 cubic yards in July, 1909. All the excavation was "work excavation," there being no "plant excavation."

The dry excavation amounted to 1,566,167 cubic yards, and was principally by steam shovels. The dredges removed 876,115 cubic yards, and 86,700 cubic yards were sluiced, in addition to the amount pumped into Gatun Dam by suction dredges. The progress on the locks at Gatun, Pedro Miguel, and Miraflores is referred to elsewhere in this issue.

In the Atlantic Division, the total excavation was 490,217 cubic yards. Of this total, 65,022 cubic yards were dry excavation, and the remainder was removed by the dredges in the Atlantic entrance.

The total excavation in the Central Division was 1,360,117 cubic yards, all of which was from the prism.

In the Pacific Division, the total excavation was 668,648 cubic yards, 598,876 cubic yards of which were taken out by the dredges at the Pacific entrance, and 69,772 by the hydraulic excavation plant at Miraflores Locks.

A detailed statement of the excavation, and a summary of the work on the locks and dams, follow:

ATLANTIC DIVISION.

Locality.	"Work." Excavation.	"Plant." Excavation.	Total excavation.
Dry excavation—	*Cu. Yds.*	*Cu. Yds.*	*Cu. Yds.*
Locks, Dam and Spillway	6,897	....	6,897
Mindi	58,125	....	58,125
Total	65,022	....	65,022
Wet excavation—			
Atlantic entrance	425,195	....	425,195
Locks, Dam and Spillway	....	....	....
Total	425 195	....	425,195
Total wet and dry excavation	490,217	....	490,217

CENTRAL DIVISION.

Locality.	"Work." Excavation.	"Plant." Excavation.	Total excavation.
Dry excavation—			
Culebra Cut	1,337,833	....	1,337,833
Chagres section	5,356	....	5,356
Wet excavation—			
Chagres section	16 928	....	16,928
Total	1,360,117	....	1,360,117

PACIFIC DIVISION.

Locality.	"Work." Excavation.	"Plant." Excavation.	Total excavation.
Dry excavation—			
Locks, Dams and Spillways	104,157	....	104,157
Diversions	....	....	....
Prism, south of Pedro Miguel Locks	43,799	....	43,799
Total	147,956	....	147,956
Wet excavation—			
Pacific entrance	520,692	....	520,692
Miraflores Locks	....	....	.....
Total	520,692	....	520,692
Total wet and dry excavation	668,648	....	668,648

TOTAL CANAL EXCAVATION.

Locality.	"Work." Excavation.	"Plant." Excavation.	Total excavation.
Dry excavation	1,556,167	....	1,556,167
Wet excavation	962,815	....	962,815
Total	2,518 982	....	2,518,982

Mean rainfall along Canal (eleven stations) 6.87 inches.

By "Work" Excavation is meant excavation actually made for one of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc.; that is, it represents material taken from the area to be occupied by the Canal, and constitutes excavation useful for the completed Canal.

By "Plant" Excavation is meant excavation outside of any of the constituent parts of the Canal, such as Prism, Diversions, or Locks, etc. It includes material necessary to be excavated for construction purposes only, and is chargeable against the particular plant item for which it is performed, such as Prism, Diversions, Locks, etc.

DAM AND LOCK CONSTRUCTION.

Material.	Atlantic.	Pacific.	Total.
	Cu. Yds.	*Cu. Yds.*	*Cu. Yds.*
Concrete laid in locks	71,046	52,746	123,792
Concrete laid in dams and spillways	5,935	....	5,935
Fill placed in dams	526,943	94,237	621,180

Atlantic Terminal Docks.

Work on the second of the docks at the Atlantic terminus of the Canal has been begun, and requisition has been made to the Washington office for materials to be used in this dock, and dock No. 16, already in process of construction. The requisition calls for steel caissons and reinforcing iron, and a requisition to be placed this week, will provide for the I-beams to be used in the floor system. An article in THE CANAL RECORD of May 31 gave an outline of the general project, and a plan of the series of six docks, only two of which will be erected at this time. One of them, dock No. 16, will be accessible for ships on one side only, because the other side will abut on a fill, which will become part of the mainland. Dock No. 17 will be 300 feet west of the face of dock No. 16, and will jut out from the mole, which is being extended from the shore as a means of access to the system of docks.

The caissons for dock No. 16 will be 4 feet in diameter, and the materials required consist of 2,382 intermediate sections, 2,625 ring bands, 2,382 vertical splice plates, 243 bottom sections, 243 vertical splice plates for bottom sections, 243 bottom reinforcing bands, 271,000 button-head rivets, ¾-inch by 2 3-8 inches long; 19,500 countersunk rivets, ¾-inch. The total weight of these plates will be 4,000,000 pounds. The caissons for dock No. 17 must be sunk to greater depth than those for the dock nearer shore, and, therefore, will be 6 feet in diameter. The materials required consist of 2,492 intermediate sections, 2,707 ring bands, 2,492 vertical splice plates, 215 bottom sections, 215 vertical splice plates for bottom sections, 215 bottom reinforcing bands, 379,200 button-head rivets, ¾-inch by 2 3-8 inches long, 25,300 countersunk rivets, ¾-inch. Delivery of the plates, which will be of ½-inch commercial low carbon rolled steel, will be begun by October 15. The plates will be bent and riveted at Cristobal shops. Reinforcing iron for the concrete sheet piling consists of 4,500 pieces of steel bar, 7-8 of an inch square and 18 feet long, approximate weight 210,610 pounds.

Plans for the construction of dock No. 17 have been approved. They provide for a

NOTES OF PROGRESS.

(Continued.)

dock 1,000 feet long and 155 feet wide, instead of 150 feet, as in the preliminary plans, and for open built cylinder substruction, instead of the single row of cylinders with concrete piling bulkhead, as provided in the original plans. The floor system will consist of steel girders embedded in concrete, and will bear a load of 1,000 pounds per square foot. This last change is made to expedite construction, and the widening of the dock is to make it possible to divide the space into symmetrical bays 27 feet wide. It will be paved with brick, instead of concrete, as at first provided. Two depressed railway tracks will extend along the axis of the pier. The dock will be constructed upon 215 steel caissons 6 feet in diameter, built up of sections 5 feet long, and varying in length according to the depth to hard rock. There will be 13,103 feet of caisson below mean tide, and 430 feet above mean tide. The floor area will be 154,078 square feet. The items entering into the bill of cost, are:

Steel caissons, 5,879,604 pounds, 2,707 sections; caisson shoes, 62,172 pounds; concrete to top of caissons, 14,170 cubic yards, top of caissons to floor, 1,576 cubic yards, concrete in floor, 3,805 cubic yards; concrete in curb wall outside of wharf, 25 cubic yards; concrete in beams, 4,796 cubic yards; concrete in haunches, 223 cubic yards; total concrete, 24,595 cubic yards; paving brick, 129,312 square feet; girders, 6,570,182 pounds; I-beams, 78,064 pounds; angles, 188,160 pounds; plates, 7,501 pounds; reinforcing rods, 925,662 pounds; 24 mooring bits, 12,480 pounds; bolts, 9,500 pounds; fender piling, 33,150 linear feet; timber for walling, 20,000 feet; false work, 4,050 feet; permanent track, 4,000 linear feet; reinforcing French rail, 165 tons; 4 Ellis bumping posts.

On dock No. 16, one thousand one hundred feet of false work for the bulkheads have been completed, four of the caissons are down to rock, and four more are under way (these were manufactured on the Isthmus); and the concrete platform for the casting of the reinforced concrete sheet piling has been built. On dock No. 17, the false work necessary for the sinking of the cylinders has been begun.

Gatun Dam Spillway.

The concrete work in the Spillway of Gatun Dam is over 67 per cent completed, 150,752 cubic yards, out of a total of 225 000, having been placed at the close of the work on August 12. A statement of the amount laid each working day last week, and of the total in place, follows:

Date.	Concrete Laid.	Hours worked.	No. Mixers.
August 7	216	13.00	2
August 8	160	11.00	2
August 9	184	12.00	2
August 10	144	12.00	2
August 11	200	14.00	2
August 12	152	12.00	2
Total	1,056	74.00	2
Previously reported	149,696		
Grand total	150,752		

Cash Sale of Commissary and Hotel Books.

The sale for cash of commissary and hotel coupon books to gold and silver employes of Gorgona shops will be continued during the month of August. Books are also sold to silver employes by the deduction from pay roll method. A recent poll indicates that the employes are in favor of the cash method about three to one.

Sanitary Department Changes.

During the absence of Major Robert E. Noble, temporarily detailed for duty in Porto Rico, the position of general inspector in the Sanitary Department will be filled by Dr. M. E. Connor, health officer at Colon and Cristobal. Dr. A. E. Mayner, assistant health officer, Panama, will fill Dr. Connor's place while the latter is engaged in the inspection work, and Dr. Harry Eno, district physician at Pedro Miguel, has been detailed for duty in connection with the office of assistant health officer, Panama.

CONCRETE WORK IN THE LOCKS.

Over 60 per cent of the concrete for all the locks is in place, the amount at the close of the work on August 12, being 2,575,507½ cubic yards, out of a total of approximately 4,284,400. A total of 33 199½ cubic yards of concrete was laid in the locks during the week ending August 12.

GATUN LOCKS.

Over 73 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of the work on August 12, being 1,529,392½ cubic yards, out of a total of 2,085,000.

A statement of the amount of concrete placed in the locks each working day for the week ending August 12, and of the total, follows: and a similar statement for the work in the Spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant. 2-cubic yard mixers.			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
August 7	2,050	32.58	6	560	8.40	2	178	2,788
August 8	1,724	30.16	6	548	8.40	2	202	2,474
August 9	1,938	31.06	6	562	8.25	2	264	2,764
August 10	2,320	40.28	6	450	7.40	2	196	2,966
August 11	2,246	36.24	8	442	7.40	2	252	2,940
August 12	1,650	26.12	8	494	7.40	2	244	2,388
*Portable mixers				417½				417½
Total	11,928	197.24	6.66	3,473½	48.45	2	1,336	16,737½
Previously reported								1,512,655
Grand total								1,529,392½

*The 417½ yards shown for the portable mixers are reinforced concrete, and were placed on the following days: August 7th, 72; August 8th, 51; August 9th, 71; August 10th, 94; August 11th, 49½; August 12th, 80.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is about 84 per cent completed, 702,270 cubic yards, out of a total of 837,400 having been placed at the close of work on August 12. The record for each of the six 8-hour working days of last week, follows:

Date.	Auxiliary Plant.						Large stone.	Total.
	2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
August 7	480	13.50	3	188	12.17	3		668
August 8	626	18.00	3	198	14.00	2		824
August 9	494	14.00	3	155	9.75	2		649
August 10	424	11.00	3	168	8.82	2		592
August 11	686	19.00	3	120	7.00	2		806
August 12	432	15.00	3	79	4.50	1		511
Total	3,142	90.50	3	908	56.24	2		4,050
Previously reported							4,441	698,220
Grand total							4,441	702,270

MIRAFLORES LOCKS.

Over 25 per cent of the concrete for the system of two twin locks at Miraflores was in place on August 12, the total amount on that date being 343,845 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

Date.	Construction Plant. 2-cubic yard mixers.			Auxiliary Plant.							Total.
				2-cubic yard mixers.			½-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			Cu. Yds.			Cu. Yds.			Cu. Yds.	Cu. Yds.
Aug. 7	1,152	24.85	5	880	13.50	2	181	17.00	3		2,213
Aug. 8	1,022	22.77	5	900	15.00	2	139	14.50	2		2,061
Aug. 9	1,054	20.82	5	832	14.00	2	40	6.00	1		1,926
Aug. 10	1,294	25.00	5	704	7.00	2	71	7.00	1		2,069
Aug. 11	1,198	26.67	5	814	13.50	2	96	8.00	1		2,108
Aug. 12	1,304	21.17	5	696	12.50	2	35	3.50	1		2,035
Total	7,024	131.31	5	4,826	75.50	2	562	56.00	1.5		12,412
Previously reported										3,693	331,433
Grand total										3,693	343,845

SOCIAL LIFE OF THE ZONE.

Women's Clubs.

The Empire Woman's Club held a musicale and informal reception in honor of Mr. and Mrs. A. B. Dickson on Thursday afternoon, August 10, members of the Paraiso and Gorgona women's clubs being present as guests. The following program was given: Piano solo, *Pierette*, Chaminade; Mrs. Shivers. Songs, (*a*) *The charmer*, Strelezki; (*b*) *A china tragedy*; Mrs. Roberts, with violin obligato by Mrs. Decker. Piano solos, (*a*) *Polonaise*, Chopin; (*b*) *Etude No.* 1, Wollenhaupt; Mrs. Regan. Songs, (*a*) *Answer*, Robyn; (*b*) *Tears are pearls*; Mrs. Young. Violin solos, (*a*) *Romanza*, Reis; (*b*) *Spanish dance*, Moskozski; Miss Smith. Presentation of a gift to Mrs. Dickson by the president of the club.

The study course outlined by the club for the coming year will begin at the meeting on the first Tuesday in September.

A called meeting of the Paraiso Woman's Club will be held at the lodge hall on Wednesday afternoon, August 23, to arrange the program of work to be undertaken by the organization for the coming year, and to prepare for the election of officers, which will be held at the first regular meeting on September 6.

Regular meetings of the Gorgona Woman's Club will be resumed on Thursday, September 21, at which time there will be an election of officers.

An euchre club, composed of 35 women, has been organized in Empire, and the initial meeting was held at the home of Mrs. Davies on Thursday afternoon, August 10. The club will meet once a week at the homes of members. Small weekly dues are charged, and the money will be devoted to the purchase of prizes.

Church Notes.

On Wednesday, August 9, the Woman's Altar Guild and members of the parish of St. Ferdinand's Roman Catholic church at Empire, held a reception in the lodge hall in honor of the newly arrived resident priest, the Rev. Father McCarthy of Buenos Aires. The Rev. Father Allot, rector of the parish, gave an address in which he outlined the aims and scope of the parish work.

A children's choir, composed of ten boys and girls, has been organized, with Father McCarthy as director. The children sing at vespers on Friday night, and at the two Masses on Sunday morning.

The Union Christian League at Culebra held an informal reception on Thursday evening, August 10, in honor of the retiring president, Mr. F. C. Freeman. A program, consisting of songs and piano solos, was given. The pastor of the church made an address of farewell, and Mr Freeman responded. There were 75 persons present.

Six-Year Men Formulate Plans for a Society.

At a meeting held at the University Club on Saturday evening, August 12, plans were formulated for a society of employes and ex-employes of the Isthmian Canal Commission, and of the Panama railroad, who have completed six years' continuous service on the Isthmus. The constitution adopted, subject to final approval at the first general meeting of the society, provides for an annual reunion of the members, the publication of a year book, to contain a roster of the members with their current addresses and biographical notes, and the adoption of an emblem of appropriate design. A committee of five was appointed, with authority to select a name for the society and a design for the emblem, solicit members, and make the necessary arrangements for the first general meeting. The members of this committee are: John K. Baxter (chairman), R. E. Wood, W. F. Shipley, C. A. McIlvaine, John J. Meehan.

PERSONAL.

Major Eugene T. Wilson returned to the Isthmus from New York, on the *Santa Marta*, on August 10.

Prof. Emory R. Johnson of the University of Pennsylvania is making a visit of several weeks on the Isthmus, for the purpose of inspecting the Canal work. He was a member of the Walker Isthmian Canal Commission of 1900-01, which made the report in 1902 in favor of selecting Panama as the most desirable route for the construction of the Isthmian Canal. He is an authority on railway and water transportation, and prepared for the report of the Walker Commission, the chapter entitled "The industrial and commercial value of a canal."

Canal Zone Humane Society.

The second annual meeting of the Canal Zone Humane Society was held at the Hotel Tivoli on Sunday afternoon, August 13. The annual report of the secretary showed that the efforts of the organization are directed toward the prevention of cruelty to children, and the prevention of cruelty to animals. Under the first head, the society has been interested in two cases. One of these is the case of a 13-year-old girl, living at Matachin, who was taken from her parents by order of the court, at the request of the society, because she was not properly fed and was surrounded by bad companions. She was cared for temporarily at the orphan asylum of St. Joseph, in the Malambo section of Panama, and is now at an asylum in Albany, N. Y., where she is to be cared for under an endowment of $500, of which $453 was subscribed by residents of Gorgona. The society spent about $150 on this case. A picnic was held in January for the inmates in the Panama asylum for boys.

A notice, in Spanish and English, forbidding drivers to ill treat horses, has been posted at the intersection of the Corozal and Sabanas roads, near Panama; the watering trough near the railroad station in Panama city, formerly dry, is now kept filled, and horses unfit for service have been taken from work, at the instance of the society. The Canal Zone police have been active, and a number of arrests and convictions have been made. The treatment of animals in the settlements in the Canal Zone is reported to be very satisfactory, and there is a marked improvement in the condition of the horses seen on the streets of Panama.

On October 14, 1910, the Ancon Dramatic Club gave a performance under the auspices of the society. This entertainment, which was held at the National Theatre in Panama, resulted in a net profit of $200 for the organization. In its various branches, the expenditures of the society have been about $700 for the past year.

It was decided that the society should place printed cards in Canal Zone villages, calling attention to the work of the organization, and stating that the Canal Zone police have been instructed to investigate any cases that may be reported to them. Cases of neglect and cruelty, noted in the villages, should be reported to the local police, or a statement be made in writing to the secretary of the society at Ancon. It was also decided to send a button to every subscriber. The annual "Treat" to the boys of the orphanage will be given during the Christmas holidays. For the purpose of raising means to carry on the work of the society, a committee will be appointed at the meeting of the board of directors.

The following officers were elected for the term of one year: President, Hon. Frank Feuille; vice-presidents, Colonel W. C. Gorgas, J. P. Fyffe, and Mrs. J. D. Williamson: secretary, A. J. Orenstein; treasurer, F. B. Fearon; directors, Colonel Charles F. Mason, Judge S. E. Blackburn, and Miss J. Macklin Beattie. A meeting of the board of directors, which is composed of the officers and directors, will be held at the Hotel Tivoli on Monday evening, August 21.

Flamenco Island Launch Service.

The launch *Birdena* will make daily trips to Flamenco Island, leaving the Balboa dredging wharf at 7 a. m., should business offer. Passage may be procured from the resident engineer at Balboa.

Public Installation of Kangaroos.

All Kangaroos and families are invited to attend a public installation of officers and informal dance, to be given by Ancon Court, No. 7, I. O. P. K., on August 26, at 7.30 p. m., in Ancon hall.

Ancon Crusher.

A statement of the rock crushed at Ancon quarry during the week ending August 12, follows:

DATE.	Hours worked.	Cubic Yards.
August 7	6.15	2,588
August 8	7.25	2,626
August 9	6.15	2,035
August 10	....	*644
August 11	2.55	469
August 12	7.10	1,568
Total	30.00	9,930

*Shut down, putting new shaft in No. 12 crusher.

Obituary.

Mrs. John Scott Payne, widow of the late Major J. S. Payne, United States Army, retired, died at Kanuga Club, N. C., on August 11. Mrs. Payne had until recently, made her home on the Isthmus with her son, William H. Payne of the Subsistence Department.

John T. Elsey, an American, 38 years of age, employed in the Atlantic Division, with residence at Cristobal, died at Ancon Hospital on Sunday, July 30, of hæmoglobinuric fever. He had been on the Isthmus five years. He is survived by his wife.

Missing Men.

Any one having knowledge of the whereabouts of Thomas H. Chancellor, last heard from at Cristobal over two months ago, is requested to communicate with John M. G. Watt, Corozal, C. Z.

Information is desired regarding the present whereabouts of William F. French of Boston, a civil engineer, not employed on the Canal work.

LOST—Two black and tan female hounds in the vicinity of Mamei. Will answer to the names of *Lady* and *Bugle*. A liberal reward is offered for their return to Geo. W. Pougher, Gorgona, C. Z.

RECORD OF CANAL WORK SINCE AMERICAN OCCUPATION.

MONTHLY TOTALS BY CUBIC YARDS OF EXCAVATION AND LOCK AND DAM CONSTRUCTION.

[All figures are of work useful for the completed Canal.]

DRY EXCAVATION.

CENTRAL DIVISION.

M'THS.	Culebra Section.*								Chagres Section.**				
	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
Jan	....	70,650	120,990	566,750	1,227,022	1,150,249	1,323,693	1,356,394	....	169,447	389,399	175,802	255,385
Feb	....	75,200	165,410	639,112	1,248,265	1,194,454	1,259,173	1,409,338	....	200,145	450,182	286,309	219,550
March	....	132,840	239,178	815,270	1,290,885	1,434,597	1,509,728	1,728,748	....	324,233	619,491	484,846	297,339
April	....	126,749	213,177	879,527	1,242,574	1,272,746	1,288,845	1,414,336	....	329,483	510,020	428,777	102,103
May	27,556	75,935	196,209	690,365	960,840	1,126,963	1,099,279	1,299,100	....	235,902	386,170	248,974	29,783
June	32,551	76,905	212,623	624,586	1,134,032	1,242,134	1,305,141	1,401,016	....	322,145	275,900	164,389	32,288
July	31,599	78,570	159,789	770,570	1,121,325	1,200,828	1,153,810	1,337,833	....	345,757	233,897	166,106	22,284
August	35,056	49,210	244,823	786,866	1,171,927	1,173,370	1,377,714	....	2,900	368,683	231,543	234,404	....
Sept	25,220	44,085	291,452	753,468	1,122,860	1,235,978	1,339,948	....	21,546	346,948	235,818	234,290	....
Oct	19,695	52,940	327,009	834,499	1,160,101	1,302,901	1,320,314	....	25,627	424,911	221,409	271,409	....
Nov	28,860	60,540	221,642	790,632	1,022,576	1,070,792	1,209,554	....	44,044	336,390	93,619	260,882	....
Dec	42,935	70,630	307,689	1,025,485	1,210,046	1,152,022	1,211,400	....	98,652	383,948	105,044	197,481	....
Totals	243,472	914,254	2,702,991	9,177,130	13,912,453	14,557,034	15,398,599	9,946,765	192,769	3,787,992	3,752,492	3,153,669	958,732

ATLANTIC DIVISION.

Months.	Colon (Mindi)†		Gatun Locks, Dam and Spillway.††			
	1909.	1911.	1908.	1909.	1910.	1911.
January	45,664	....	292,155	102,690	125,011	65,889
February	46,046	47,102	282,797	95,031	123,738	50,511
March	70,713	49,734	374,598	90,051	132,007	51,431
April	74,368	74,030	373,456	70,009	103,243	12,548
May	71,407	64,482	266,747	52,786	82,958	17,677
June	80,101	59,157	244,951	36,556	88,088	4,840
July	82,378	58,125	213,359	39,058	95,503	6,897
August	66,249	....	188,262	40,346	99,737	....
Sept'mber	61,437	....	145,990	49,945	103,040	....
October	72,643	....	154,064	57,321	118,327	....
November	42,009	....	118,278	63,452	94,552	....
December	....	....	119,904	96,590	72,030	....
Totals	713,015	352,630	2,774,561	793,835	1,238,234	209,793

PACIFIC DIVISION.¶

Months.	Pedro Miguel Locks.‡				Miraflores Locks, Dams and Spillway.‡‡			
	1908.	1909.	1910.	1911.	1908.	1909.	1910.	1911.
January	......	83,726	27,320	15,690	7,203	61,202	31,479	48,744
February	......	58,242	9,486	6,809	39,046	53,689	15,300	12,936
March	......	95,624	6,784	674	73,194	51,417	18,184	72,739
April	......	101,365	9,129	255	98,943	60,060	12,148	79,751
May	......	57,523	10,405	5,905	73,023	47,588	20,250	57,975
June	13,228	70,971	8,420	7,454	68,691	55,653	21,994	38,023
July	22,648	77,503	4,410	6,273	104,369	50,999	11,990	97,884
August	22,217	58,025	12,789	....	94,248	35,446	17,548	....
Sept'mber	28,833	48,825	10,405	....	90,923	31,803	8,590	....
October	48,875	39,002	7,433	....	74,700	25,349	9,850	....
November	55,401	20,207	10,636	....	52,930	18,644	9,400	....
December	65,578	28,342	11,195	....	69,650	20,083	17,906	....
Totals	256,780	739,355	128,412	43,060	846,920	511,933	194,639	408,052

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*Total to August 1, 1911, 66,852,698 cubic yards.

**Total to August 1, 1911, 11,845,654 cubic yards, of which 157,275 cubic yards were removed by sluicing.

†Total to August 1, 1911, 1,829,451 cubic yards; in this total are included 172,851 cubic yards removed in 1907, and 590,955 cubic yards removed in 1908.

††Total to August 1, 1911, 6,383,230 cubic yards; in this total are included 26,628 cubic yards excavated October to December, 1906, and 1,340,179 cubic yards in 1907.

‡Total to August 1, 1911, 1,167,607 cubic yards.

‡‡Total to August 1, 1911, 1,961,544 cubic yards.

¶There were also 78,233 cubic yards excavated at Balboa locks and dams in 1907. There were removed 481,570 cubic yards at different points in prism to August 1, 1911. There were also 172 cubic yards removed by steam shovels outside of prism during October, 1908.

WET EXCAVATION.

Months.	Atlantic Division.							Pacific Division.								
	Atlantic Entrance.§					Gatun Locks †		Pacific Entrance.§§							Miraflores Locks.§§§	
	1907	1908.	1909.	1910.	1911.	1908	1909.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1910.	1911.
Jan.	111,100	490,701	521,050	510,055	520,181	.....	97,043	......	95,940	94,710	460,250	469,529	518,936	379,810	......	89,243
Feb.	110,002	427,722	444,910	493,448	455,318	.....	132,291	......	95,940	93,480	663,519	671,477	285,791	386,866	......	87,335
Mar.	84,145	546,886	461,208	412,325	391,736	.....	141,838	......	116,820	92,319	783,281	865,696	462,588	639,761	......	......
April	69,859	496,366	470,635	190,574	492,579	.....	17,938	......	110,700	104,855	676,539	731,767	534,322	439,622	......	......
May	133,847	564,386	315,370	447,578	514,178	.....	52,011	......	112,340	122,157	530,466	720,753	484,509	548,047	......	......
June	124,118	572,749	182,575	458,021	452,098	.....	38,829	50,676	62,697	133,575	656,621	844,685	475,486	576,100	......	......
July	109,922	625,497	348,451	423,092	425,195	.....	......	41,533	98,400	108,338	696,170	733,181	515,782	520,692	......	......
Aug.	194,297	638,217	422,846	508,829	....	.	......	54,530	111,930	168,284	737,774	623,263	506,969	....	......	......
Sept.	403,842	624,776	410,574	451,873	....	.....	......	114,308	105,780	153,975	750,080	662,976	473,585	....	......	......
Oct.	415,120	505,260	314,778	549,788	....	.....	......	81,836	97,170	357,122	762,276	720,920	467,873	....	......	......
Nov.	422,797	570,832	457,889	600,708	....	.....	......	71,176	92,988	365,423	609,089	627,791	425,370	....	40,000	......
Dec.	442,835	679,604	489,121	482,370	....	8,583	......	71,094	90,528	349,551	729,960	727,460	387,034	....	47,444	......
															68,681	
Tot'ls	2,621,914	6,742,996	4,839,407	5,528,661	3,251,285	8,583	479,950	485,153	1,191,233	2,143,789	3,056,025	8,399,498	5,538,745	3,490,898	156,125	176,578

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§Total to Aug. 1, 1911, 24,411,728 cu. yds.; in this total are included 399,820 cubic yards excavated in 1905, and 1,027,645 cubic yards in 1906.

§§Total to August 1, 1911, 29,305,341 cubic yards. Of this amount, 2 7,449 yards were removed by monitors.

§§§Total to August 1, 1911, 642,350 cubic yards; in this total are included 309,647 cubic yards excavated in 1909.

†Total to August 1, 1911, 488,533 cubic yards. There were also 38,425 cubic yards removed by dredges at Gatun Dam site in 1907.

CONCRETE IN LOCKS AND DAMS.

Months.	Gatun Locks.			Pedro Miguel Locks.			Miraflores Locks.		
	1909.	1910.	1911.	1909.	1910.	1911.	1909.	1910.	1911.
Jan	......	54,136	72,919	......	16,273	38,513	......	......	24,018
Feb	......	55,696	72,103	......	13,218	37,011	......	146	20,896
March	......	60,998	86,884	......	18,793	44,716	......	314	31,173
April	......	63,227	67,361	......	24,522	28,635	......	13	38,758
May	......	74,273	67,844	......	29,576	19,135	......	27	36,154
June	......	89,401	55,305	......	30,631	18,243	......	1,603	26,536
July	......	84,001	71,046	......	41,464	19,906	28	3,672	32,840
Aug.	1,298	85,686	......	......	51,264	......	74	6,030	......
Sept.	12,294	76,720	......	2,370	50,702	......	......	18,133	......
Oct.	29,378	86,949	......	8,310	61,422	......	......	22,159	......
Nov.	30,270	75,152	......	10,169	64,248	......	......	23,871	......
Dec.	42,832	80,212	......	13,007	42,834	......	......	21,533	......
Total	116,072	886,451	493,462	33,856	444,947	206,159	102	97,501	210,375

From March 17, 1909, to August 1, 1911, there were placed in the Spillway of Gatun Dam 150,282 cubic yards of concrete, including 5,935 cubic yards placed in July, 1911; in Miraflores Dam, there were placed 321 cubic yards up to August 1, 1911.

FILL PLACED IN DAMS.

M'THS.	Gatun.*				Pedro Miguel.†		Miraflores.‡			
	1910.		1911.		1910.	1911.	1910.		1911.	
	Wet.	Dry.	Wet.	Dry.	Dry.	Dry.	Wet.	Dry.	Wet	Dry.
Jan.	178,254	236,994	211,992	218,690	......	......	......	28,151	89,243	24,685
Feb.	292,215	271,788	301,733	211,008	11,510	......	......	1,438	87,335	32,404
Mar.	210,387	332,661	342,800	255,047	22,860	......	......	5,385	25,131	23,940
April	242,440	263,437	368,658	205,130	31,394	......	......	......	14,100	67,260
May	249,283	194,868	419,348	207,751	23,572	......	......	6,480	18,353	30,032
June	384,166	258,653	432,008	227,996	1,350	......	......	7,356	54,858	28,315
July	462,092	180,111	324,947	201,996	......	14,865	......	4,290	24,957	54,415
Aug.	406,606	229,774	......	......	......	......	......	10,898	......	......
Sept.	457,637	223,102	......	......	......	......	......	11,220	......	......
Oct.	480,732	259,619	......	......	......	......	40,000	14,370	......	......
Nov.	129,666	266,105	......	......	......	......	47,444	8,960	......	......
Dec.	243,121	169,575	......	......	......	......	68,681	39,224	......	......
T'tal	3,736,599	2,886,687	2,401,486	1,527,618	90,686	14,865	156,125	137,772	313,977	261,051

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*Dry fill begun in January, 1907, and 2,096,477 cubic yards of wet and 3,241,418 cubic yards of dry fill were placed in 1907, 1908 and 1909.

†170,166 cubic yards placed in dams up to December, 1909, inclusive.

‡138,587 cubic yards of wet fill and 472,091 cubic yards of dry fill were placed in dams up to December, 1909.

CANAL EXCAVATION TO DATE.

By French Companies		78,146,960
French excavation useful to present Canal		29,908,000
By Americans—		
Dry excavation	90,442,884	
Dredges	55,043,652	
Total		145,486,536
May 4 to December 31, 1904	243,472	
January 1 to December 31, 1905	1,799,227	
January 1 to December 31, 1906	4,948,497	
January 1 to December 31, 1907	15,765,290	
January 1 to December 31, 1908	37,116,735	
January 1 to December 31, 1909	35,096,166	
January 1 to December 31, 1910	31,137,677	
January 1 to July 31, 1911	19,079,472	

Totals by Divisions and Amount to be Excavated.

Divisions.	Amount excavated.		Remaining to be Excavated.	
Atlantic—				
Dry excavation	8,212,681	33,151,367	60,373	10,205,978
Dredges	24,938,686		10,145,605	
Central—				
Culebra Cut	66,852,698	78,698,352	22,591,307	23,102,944
All other points	11,845,654		511,637	
Pacific—				
Dry excavation	3,689,126	33,636,817	2,691,016	8,418,586
Dredges	29,947,691		5,727,570	
Grand totals		145,486,536		41,727,508

EXECUTIVE ORDER.

Providing for the Inspection of Steam Vessels.

By virtue of the authority vested in me, I hereby establish the following Order in the Canal Zone:

Section I. Every vessel propelled in whole or in part by machinery, shall be deemed a steam vessel within the meaning of this order.

Section 2. All steam vessels navigating the waters of the Canal Zone, except public vessels of the United States or other countries, shall be subject to the provisions of this order.

Section 3. The Board of Local Inspectors of the Canal Zone shall cause the hull of each steam vessel navigating the waters of the Canal Zone to be carefully inspected at least once every year, and shall satisfy themselves that every such vessel so inspected is of a structure suitable for the service in which she is to be employed, and has suitable accommodations for passengers and crew, and is in a condition to warrant the belief that she may be used in navigation with safety to life, and that all the requirements of the law in regard to fire, boats, pumps, hose, life-preservers, floats, signals, and other things are faithfully complied with, and if they deem it expedient, they may cause the vessel to be put in motion and may adopt any other suitable means to test her efficiency and that of her equipment.

Section 4. Whenever the Board of Local Inspectors shall find on board any vessel subject to the provisions of this order any equipment, machinery, apparatus or appliance which does not conform to the requirements of the law, the Board shall require the same to be placed in proper condition by the owner or master of the vessel, and if the said Board shall find in any such vessel any life-preserver or fire hose so defective as to be incapable of repair, the Board shall require the same to be destroyed in the presence of some person appointed by the Board to represent it.

Section 5. The Board of Local Inspectors shall cause the boilers and all appurtenances of all steam vessels to be carefully inspected before the same shall be used, and at least once every year thereafter, and shall subject all boilers to the hydrostatic test in the ratio of 150 pounds to the square inch to 100 pounds to the square inch of the working steam power allowed. All such vessels shall comply with the following requirements, viz.—

That the boilers are well made, of good and suitable material, design suitable for the service in which employed, and to be equipped with the proper safety appliances and of such construction, shape, condition, arrangement and material that they may be safely employed in the service proposed without peril to life; and the Board of Local Inspectors shall cause an examination to be made to satisfy itself that the requirements of these regulations have been complied with.

Section 6. When the inspection of a steam vessel is completed and the Board of Local Inspectors approve the vessel and her equipment, the Chairman of the Board shall make and subscribe a certificate to the Collector of Revenues in accordance with the form to be prescribed by the Board. Every certificate granted to steamers carrying passengers shall state the number of passengers of each class that any such steamer has accommodations for and can carry with prudence and safety.

If the Board of Local Inspectors refuse to grant a certificate of approval, the Chairman thereof shall make a statement in writing and give his reasons for such disapproval, and shall sign the statement as such Chairman and file the same in the records of the Board, giving a copy thereof to the owner or master of the vessel.

Section 7. All foreign private steam vessels carrying passengers to or from any port or place within the limits of the Canal Zone shall be subject to the provisions of this order, *Provided* that if any foreign passenger steamer of a country which has inspection laws approximating those of the United States has an unexpired certificate of inspection duly issued by the authorities of the country to which the vessel belongs, the said vessel shall not be subjected to an inspection other than that necessary to satisfy the Board of Local Inspectors that the condition of the vessel, her boilers and life saving equipment are as stated in her certificate of inspection; but no such certificate of inspection shall be accepted as evidence of lawful inspection unless like privileges are granted to steam vessels of the United States under the laws of the country to which such vessel belongs.

Section 8. Private steam vessels duly registered in the United States having unexpired certificates of inspection issued by the proper authorities in the United States shall not be subject to inspection hereunder.

Section 9. The Collector of Revenues shall retain on file all original certificates of inspection required to be delivered to him by the Board of Local Inspectors, and shall give to the master or owner of the vessel therein named three certified copies thereof, two of which shall be placed by such master or owner in conspicuous places in the vessel where they will be most likely to be observed by the passengers and others, and there kept at all times framed under glass; and the other shall be retained by such master or owner as evidence of the authority thereby conferred.

Section 10. Before issuing an inspection certificate to any vessel, the Collector of Revenues shall demand and receive from the owner or master of such vessel as compensation for inspection and examination made for the year, the following sums, in addition to the fees for issuing enrollments and licenses now allowed by law:

For each steam vessel of 100 tons or under........................$10.00
For each and every ton in excess of 100 tons........................ 5c.

The fees herein provided for shall cover the cost of the certificate, as well as the inspection and examination of the vessel, which fees shall be for the use and benefit of the Canal Zone treasury.

Section 11. Whenever any passenger is received on board of any steam vessel not having the certified copies of the certificate of approval placed and kept as required by this Order, such vessel shall be liable to a fine of ONE HUNDRED DOLLARS for each passenger so received, to be recovered in the Circuit Court of the Circuit in which the vessel is to be found, and the money so recovered shall be a lien upon the vessel, which may be seized and sold to satisfy the same, as well as all costs of the proceeding.

Section 12. No steamer carrying passengers shall depart from any port or place in the Canal Zone unless it shall have in its service a full complement of licensed officers and a full crew, as in the judgment of the Board of Local Inspectors may be sufficient at all times to manage the vessel.

Section 13. Every steam vessel licensed under the provisions of this Order shall have on board in an accessible place one life-preserver for every person allowed to be carried, in addition to those provided for the crew of such vessel; and if a greater number of passengers than is stated in the certificate is taken on board of any vessel within the waters of the Canal Zone, the master or owner of such vessel shall be liable to any person suing for the same to refund the passage money and TEN DOLLARS for each passenger beyond the number allowed.

Section 14. If any passenger steamer engages in excursions within or from the waters of the Canal Zone, the Board of Local Inspectors shall issue to such steamer a special permit in writing for the occasion, in which shall be stated the additional number of passengers that may be carried and the number and kind of life saving appliances that may be provided for the safety of such additional passengers, and they shall also, in their discretion, limit the route and distance for such excursions.

Section 15. The master of every passenger steamer shall keep a correct list of all passengers received on board the vessel, which record shall be open to the inspection of the Inspectors and the officers of the Customs at all times, and the correct number of passengers shall be furnished to the Inspectors as often as called for.

Section 16. Every master of a passenger steamer who fails through negligence or design to keep a list of passengers as required by the preceding section shall be liable to a fine of ONE HUNDRED DOLLARS, to be recovered in the Circuit Court of the Circuit in which the vessel is to be found.

Section 17. Every steam vessel carrying passengers shall be provided with two good double-acting fire pumps to be worked by hand; each chamber of such pumps shall be of sufficient capacity to contain not less than one hundred cubic inches of water and such pumps shall be placed in the most suitable part of such vessel for efficient service, having suitable well fitted hose to each pump at least one half the vessel in length and kept at all times in perfect order and shipped up and ready for use. On every steamer not exceeding two hundred tons, one such pump may be dispensed with. Each fire pump shall be supplied with water by a suitable pipe connection passing through the side of the vessel so low as to be under water at all times, and no fire pump thus provided shall be placed below the lower deck of the vessel. Every steamer shall also be provided with a pump which shall be of sufficient strength and suitably arranged to test the boilers thereof.

Section 18. Every vessel coming within the provisions of this order shall be provided with such number of life-boats, floats, rafts, life-preservers, line carrying projectiles and best means of propelling them, and drags, as in the judgment of the Board of Local Inspectors will best procure the safety of all persons on board such vessels in case of disaster. And every such vessel shall have the life boats required by this order provided with suitable boat disengaging apparatus, so arranged as to allow such boats to be safely launched while such vessels are under speed or otherwise so as to allow such disengaging apparatus to be operated by one person, disengaging both ends of the boat simultaneously from the tackle by which it may be lowered to the water; and the Board of Local Inspectors shall determine the kind of lifeboats, floats, rafts, life-preservers, line carrying projectiles and means of propelling the same, and drags which are to be used on the vessel, and also the kind and capacity of the pumps for freeing the vessel from water in case of heavy leakage, the capacity of such pumps being suited to the navigation in which the vessel is employed.

Section 19. The owner or master of any such vessel who refuses to provide such lifeboats, floats, rafts, life-preservers, line carrying projectiles and means of propelling them, drags, pumps or appliances which, under the provisions of the preceding sections are required by the Board of Local Inspectors, shall be fined ONE THOUSAND DOLLARS, and the same may be enforced against the owner of the vessel personally or as a lien upon the vessel, which may be seized and sold to satisfy such fine and costs of court.

Section 20. The Board of Local Inspectors shall have the power to enforce the requirements of this Order—first, by not granting a certificate—second, by revoking the certificate already issued to the vessel.

The owner or master of the vessel may appeal from the action of the Board of Local Inspectors to the head of the Department of Civil Administration at any time within ten days after the final action of the board; and the Head of the Department of Civil Administration may modify or set aside the action of the Local Board, and he shall certify his ruling to the board for observance in each case.

Section 21. Whenever a steamer engaged in carrying passengers to or from the Canal Zone enters the waters of the Canal Zone, it shall be the duty of the captain of the port to notify the master or agent of such vessel that the same is subject to the Inspection Laws of the Canal Zone; and after being so notified, it shall be the duty of the said agent or master to make a written request to the Board of Local Inspectors for the inspection of the vessel and her equipment in accordance with the provisions of this Order. Any agent or master of a vessel who fails or refuses to make the written request as herein provided for after receiving the notice above mentioned from the Captain of the Port, shall be liable to a fine of FIFTY DOLLARS upon his conviction in the Circuit Court of the Circuit in which said agent or master is to be found.

Section 22. Any violation of the provisions of this Order, for which a specific punishment is not prescribed herein, shall subject the owner or master of the offending vessel to a fine not exceeding ONE THOUSAND DOLLARS, or by imprisonment in jail not exceeding six months, or both such fine and imprisonment in the discretion of the Court.

Section 23. The fines and penalties imposed under this Order shall constitute a lien on the vessel in each case, and upon judgment for any such fine or penalty execution may issue therefor, as in civil cases, against such vessel, and same shall be sold to satisfy such execution; and the court may order the provisional detention of such vessel to abide the judgment of the court; but a bond, to be approved by the judge of the court, may be given to secure the payment of any judgment that may be rendered, and the vessel shall be released thereon.

Section 24. The Canal Commission may establish rules and regulations not inconsistent herewith for the better enforcement of this Order.

Section 25. This Order shall take effect ninety days after the same shall have been published in THE CANAL RECORD.

WM. H. TAFT

THE WHITE HOUSE,
July 21, 1911.
[No. 1386.]

Ancon Hospital Records.

Six large file cases are being made to increase the filing facilities in the library at Ancon Hospital, three for the index cards of hospital cases treated, and an equal number for the history charts. Heretofore, the history charts only have been kept in the library, but when the new file cases are finished all of the completed index cards will be taken there to be filed. About 107,000 index cards have been filed to date, indicating the treatment of that number of patients in Ancon Hospital during the little more than seven years of Canal construction. Each of the new index file cases contains about 70 boxes, each box having sufficient space to accommodate 1,000 cards, a total of 70,000 cards to the case, or a grand total of 210,000 cards for all three cases. These, with the history chart cases, make a total file capacity of about 425,000 cards and charts.

Porto Bello Crusher.

During the week ending July 29, there were crushed at Porto Bello, for the concrete work at Gatun, 10,636 cubic yards of rock in 27.20 hours. The record for the week ending August 5 was 10,698 cubic yards in 29.49 hours. A statement of the work done in the week ending August 12, follows:

DATE.	Hours worked.	Cubic Yards.
August 7	5.23	2,176
August 8	4.15	1,731
August 9	3.39	1,487
August 10	2.32	1,238
August 11	3.22	1,441
August 12	4.25	1,895
Total	23.36	9,968

The salesroom of the Ancon market is to be enlarged, separate sections are to be arranged for gold and silver employes, and a grocery department is to be added.

LABOR FORCE AND QUARTERS IN JULY.

The total force at work on the Canal and railroad on July 26 was 34,681, as compared with 32,690 at the end of June, and with 36,450 in July, 1910. Canal employes numbered 27,740, and Panama railroad, 6,941. The number of "gold," or white American employes in July, 1911, was 4,250, as compared with 4,380 in July, 1910. The force report follows:

DEPARTMENT.	SILVER EMPLOYES.*														Total Gold.	Grand Total.
	Artisans.						European Laborers.		West Indian Laborers.							
	Monthly.	44 cents.	32 cents.	25 cents.	20 cents.	16 cents.	20 cents.	16 cents.	20 cents.	16 cents.	13 cents.	10 cents.	7 cents.	Total Silver.		
Const'ct'n and Eng'r'ng.	4 243	13	17	229	652	2,578	3,661	100	109	451	4,104	2,613	258	19,028	3,185	22,213
Civil Administration	166	..	..	2	4	26	......	......	...	.....	......	14	....	212	307	519
Sanitation	701	..	..	3	3	1	4	......	...	3	5	389	†12	1,121	386	1,507
Quartermaster's	897	..	1	112	148	91	261	......	17	.....	98	868	†14	2,507	205	2,712
Subsistence	608	..	..	1	1	......	......	......	...	.....	......	......	....	610	50	660
Disbursements	7	..	..	.....	.....	......	......	......	...	.....	......	......	....	7	25	32
Examinat'n of Acconnts.	5	..	..	.....	.....	......	......	......	...	.....	......	......	....	5	92	97
Total	6,627	13	18	347	808	2,696	3,926	100	126	454	4 207	3,884	284	23,490	4,250	27,740
Month previous	6,589	14	19	338	761	2,322	2,958	876	126	465	3,752	3,328	247	21,795	4,292	26,087

Panama railroad force, 3,599; Panama railroad relocation force, 2,165; Panama railroad commissary force 1,177. Total, 6,941. I. C. C. force, 27 740 Grand total, 34,681
*All wages specified are in gold. †Includes six 5-cent employes.

The employes in the Department of Construction and Engineering on July 26 were distributed, as follows:

DIVISION.	SILVER EMPLOYES.*														Total Gold.	Grand Total.
	Artisans.						European Laborers.		West Indian Laborers.							
	Monthly.	44 cents.	32 cents.	25 cents.	20 cents.	16 cents.	20 cents	16 cents.	20 cents.	16 cents.	13 cents.	10 cents.	7 cents	Total Silver.		
Chief Engineer	44	..	..	2	1	......	......	......	...	....	175	......	....	222	171	393
Mechanical	186	5	2	24	47	369	69	......	...	....	708	21	8	1,438	753	2,191
Atlantic	1,854	6	14	100	328	1,132	1,219	58	...	23	985	451	52	6,222	859	7,081
Central	1,103	2	..	30	112	444	1,759	16	90	428	935	1,946	139	7,004	783	7,787
Pacific	1,056	..	2	73	164	633	614	26	19	...	1,301	195	59	4,142	619	4 761
Total	4,243	13	17	229	652	2,578	3,661	100	109	451	4,104	2,613	258	19 028	3,185	22,213
Month previous	4,143	14	18	218	602	2,206	2,650	832	110	461	3,703	2,176	232	17,395	3,195	20,590

QUARTERS.

On August 1, there were 23,438 occupants of Commission quarters. Of this number, there were 9,228 white Americans, including 5,261 men, 2,028 women, and 1,939 children. There were 5,478 Europeans, of whom 4,891 were men, 242 were women, and 345 were children. There were 8,515 negroes, of whom 5,998 were men, 1,102 were women, and 1,415 were children.

The above figures include 28 Asiatics at Balboa, and four at Porto Bello.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

The moving picture schedule for the week ending August 26 is, as follows: Monday, Corozal; Tuesday, Empire; Wednesday, Culebra; Thursday, Gatun; Friday, Cristobal; Saturday, Gorgona.

The Hearons Sisters Concert Company of New York City will arrive August 18, and will give a series of entertainments, as follows:

Empire, Saturday, August 19; Gatun, Monday, August 21; Gorgona, Tuesday, August 22; Cristobal, Thursday, August 24; Porto Bello, Friday, August 25; Empire, Sunday, August 27; Corozal, Monday, August 28; Culebra, Tuesday, August 29; Gatun, Wednesday, August 30; Cristobal, Sunday, September 3; Corozal, Thursday, September 7; Gorgona, Saturday, September 9; Culebra, Sunday, September 10.

CULEBRA.

The following high scores were rolled during the week in duckpins: Huttelmaier, 124, 113, 105; Palmer, 111, 111; Fox, 106, 102; Bronson, 111; Cornthwaite, 100; Brown, 100; Fay, 100.

The game of volleyball, between the married men and bachelors, in the gymnasium on Friday evening, resulted 2 to 1 in favor of the bachelors.

The local handicap bigpin series will begin August 20. Entrants must hand in their fee before the first ball is rolled. Rules for the game will be posted as soon as the committee has made out the handicaps.

EMPIRE.

The following high scores were bowled on the alleys during the past week: Tenpins—Huson, 201; Anderson, 206; Giavolla, 202; Goolsby, 201; Pinney, 205; Parkis, 213. Duckpins—Pinney, 103, 113; Reiman, 107, 117; Lang, 100; Payne, 104; Dakin, 100, 102; Snapp, 108; Marshall, 110.

The topic for discussion in the literary and debating society on August 10 will be "Individuality."

There will be an informal song service on Sunday evening, August 20, at 9 o'clock.

The basketball game played on Saturday, August 12, between the engineer's office and the gymnasium team, resulted in a victory for the former by a score of 32 to 29.

GORGONA.

A boys' gymnasium class has been formed, and will meet every Monday and Thursday at 5.10 p. m. A regular course of calisthenics, mat, and apparatus work will be given. Interest is manifested in the men's gymnasium class, and the number is increasing at each meeting. Monday nights, the class is preceded by a talk on some subject in hygiene or personal care of the health. On Thursday night, August 14, another social gathering will be held after the gymnasium class.

GATUN.

The Uniformed Rank of the Knights of Pythias held a drill at the clubhouse last Thursday night. Any member of the Y. M. C. A. wishing to learn military tactics with this drill class, is at liberty to take part at the weekly meetings.

The Ancon bowling team came to Gatun on Saturday night and met defeat in three straight games of duckpins.

CRISTOBAL.

The afternoons for ladies will, hereafter, be Wednesdays and Fridays, from 2 to 5 o'clock. All ladies are invited to use the bowling alleys on the above afternoons. Rubber soled, or leather soled shoes without heels, may be used on the alleys.

All men interested in a handball league are requested to hand their names in to the desk by Saturday night, August 19.

An open meeting of the literary and debating club will be held on Wednesday, August 23. The program will consist of stories, songs, contests, and refreshments.

High scores for the week ending August 12 are, as follows:

Duckpins—Herrington, 110; Hess, 107; Collins, 101; Smith, 104; Claherty, 108, 105, 102; Bruggee, 106.

Tenpins—Furlong, 221, 213, 209, 201; Atkins, 226; Barrett, 234, 209, 204, 200; Burns, T., 200; Louch, 212, 201, 200, 200; Bullard, 202; Sterner, 207; Gibson, 200.

PORTO BELLO.

The Porto Bello chess club has commenced a series of match games between two teams named "The checkmates," consisting of Hanbury, Tuttle, McDevitt, Colberg, Gaskill and Rogers; and "The checkers," consisting of Morgan, Corrigan, Mackintosh, Goodfellow, Wright and Schreiber. Each player will play one game with each player on the opposing team. The winners will be tendered a banquet by the losing team.

The following vessels arrived at, or departed from, the port of Balboa during the week ending August 12:

Arrivals—August 6, *Pachitea*, from Callao; August 7, *Mexico*, from Valparaiso; August 9, *San Juan*, from San Francisco; August 11, *Barracouta*, from San Francisco; August 12, *Stanley Dollar*, from San Francisco.

Departures—August 6, *Lansing*, to Port Harford; August 8, *Ecuador*, to Guayaquil; August 9, *Huasco*, to Valparaiso; August 10, *Acapulco*, to San Francisco; *Peru*, to Guayaquil; August 11, *Riverside*, to San Francisco; August 12, *Manavi*, to Buenaventura; *Pachitea*, to Callao.

Rainfall from August 1 to 12, 1911, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	*Ins.*		*Ins.*
Ancon	1.94	12	3.17
Balboa	2.39	12	†3.61
*Miraflores	1.09	1	2.69
Pedro Miguel	1.15	9	2.62
Rio Grande	2 13	2	4.14
Central Section—			
Culebra	1.12	6	3.74
*Camacho	1.46	2	3.64
Empire	.65	6	2.44
Gamboa	.58	7	2.19
*Juan Mina	1.52	5	3.08
Alhajuela	1.07	1	3.40
*El Vigia	1.27	12	3.69
*Gorgona	1.05	2	3.43
San Pablo	.59	1	1.59
Tabernilla	.53	2	1.42
Bohio	.85	1	1.68
*Monte Lirio	.29	1	1.09
Atlantic Section—			
Gatun	.30	‡	1.32
*Brazos Brook	.30	7	1.40
Cristobal	.65	5	2.53
Porto Bello	1.12	11	§3.66

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight. †To 5 p. m., August 12. ‡August 9 and 12. §To 5 p. m., August 11.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, August 12, 1911. All heights are in feet above mean sea level.

DAY AND DATE.	STATION.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun., Aug. 6	127.8	94.2	47.4	13.9	13.6
Mon., Aug. 7	126.1	92.7	45.5	13.8	13.6
Tues., Aug. 8	126.0	92.5	45.4	13.6	13.6
Wed., Aug. 9	133.2	97.7	50.3	13.8	13.5
Thurs., Aug. 10	128.3	94.9	49.8	14.7	13.9
Fri., Aug. 11	129.0	94.6	47.2	14.0	13.9
Sat., Aug. 12	127.2	93.9	47.3	14.0	13.9
Height of low water	125.0	92.0	44 0		

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending August 23, 1911. (75th meridian time):

DATE.	Low.	High.	Low.	High.	Low.
	A.M.	A.M.	P.M.	P.M.	P.M.
August 17	2.18	8.23	2.55	8.51	.....
August 18	3.11	9.15	3.51	9.50	......
August 19	4.12	10.18	4.58	11.03	......
August 20	5.27	11.32	6.08	.....	.....
			A.M.		
August 21	......	12.21	6.45	12.47	7.18
August 22	......	1.35	7.52	1.56	8.20
August 23	......	2.36	8.50	2 56	9 15

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal, Colon, and Balboa, during the week ending August 12:

Colon, August 6, New York, with 53 cases caustic soda, 29 barrels rosin, 12 kegs chalk, 9 cases insulated wire, 8 barrels cutting compound, 143 bundles binder board, 5 cases metal polish, for stock; 20 barrels baffle brick, 5 cases electrical material, for Pacific Division; 40 bundles car springs for Central Division; 8 cases brake shoes for Atlantic Division; 10 packages drugs and sundries for Sanitary Department; and a miscellaneous cargo, the whole consisting of 411 packages, weighing 50 tons.

Prinz August Wilhelm, August 7, New York, with 949 pieces and 451 bundles galvanized pipe for stock; 276 rolls mesh reinforcement for Pacific Division; 100 bags creosoted pins for Panama Railroad Company.

Santa Marta, August 10, from New York, with 5 cases carbon paper for stock; 38 barrels insulators for Panama Railroad Company.

Atenas, August 10, from New Orleans, with 1,348 bales prairie hay, 250 bales alfalfa hay, 100 rolls roofing paper, 598 bundles lumber (ceiling), 1,763 pieces lumber (yellow pine), 5,252 pieces lumber (siding), 60 pieces lumber (white oak), for stock; 1,125 pieces lumber (white oak) and 388 tons iron pigs for Mechaninal Division; 6 pieces castings for Pacific Division.

Stanley Dollar, August 11, from Hoquiam, Wash., with 16,907 pieces Douglas fir lumber for stock.

Allianca, August 11, from New York, with 50 pieces steel bars, 174 pieces steel beams and angles, 12 bundles steel bars, 10 barrels alum, 40 barrels sulphate aluminum, 12 kegs castings, 11 rolls harness leather, 434 bundles shovels, 2,540 bundles iron pipe, 10 cases stationery, for stock; 376 bundles steel bars, 6 crates steel plates, 19 cases copper rail bonds, 9 packages capstan, for Atlantic Division; 37 pieces castings for Central Division; 14 cases copper rail bonds, 12 crates pump parts, 4 cases electrical material, for Pacific Division; 150 bundles galvanized bars, 18 bundles creosoted pins, for Panama Railroad Company; 14 cases glass globes and 13 crates pins for Mechanical Division; and a miscellaneous cargo, the whole consisting of 4,075 packages, weighing 203 tons.

Family Quarters.

Applications for married quarters were on file on August 1, as follows:

DISTRICT.	List No. 1.	List No. 2.
Ancon	2	37 (3)
Balboa	....	32 (7)
Bas Obispo	....	17 (1)
Corozal	3 (1)	31 (1)
Cristobal	1	101 (1)
Culebra	1	6
Empire	....	63 (21)
Gatun	1	123 (42)
Gorgona	1	87 (41)
Las Cascadas	....	21 (6)
Pedro Miguel	....	48 (11)
Porto Bello	1	9 (3)
Tabernilla	....	14
Toro Point	....	7 (2)
Total	10 (1)	596(139)

NOTE.—The figures in parentheses show the number of applicants already occupying regular or nonhousekeeping family quarters at stations other than those at which applications are filed.

Pacific Division Sand Service.

A report of sand cars loaded and shipped from Balboa during the month of July, 1911, follows:

DESTINATION.	Number Cars.	Cubic Yards.
Pacific Division	2,156	32,340
Central Division	37	579
Atlantic Division	6	146
Mechanical Division	10	250
Quartermaster's Department	8	190
Panama railroad	17	425
Miscellaneous	18	310
Total	2,252	34,240

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Culebra, C. Z., on Sunday, August 20, 1911, at 5.45 p. m. The program follows:

1. March—*Ideal*	Reeves
2. Selection—*The Girl of My Dreams*	Hoschna
3. Sextet from Lucia	Donizetti
4. Waltz—*Casino Tanze*	Gung'l
5. Overture—*Fest*	Leuter
6. (*a*) Medley March—*Kiss Me, Honey, Kiss Me*	Snyder
(*b*) Two Step—*Casey Jones*	Newton
7. Nautical Fantasia	Tobani
8. Popular Selection—*Remick's Hits*	Lampe
9. March—*The Arbitrator*	Bagley

CHARLES E. JENNINGS, *Musical Director.*

The next concert will be given at Corozal, C. Z., on August 27, at 7.30 p. m.

Married.

MILLER-MacKAY—At Cleveland, Ohio, on August 3, Jean MacKay of that city to Charles I. Miller. Canal Zone residence, Gorgona.

CAMERON-BELL.—At Ancon, on August 9, Florence E. Bell to Alexander J. Cameron, the Rev. Father Bicknell officiating. Canal Zone residence, Corozal.

COMMISSARY DEPARTMENT.

Special Bargain Sale.

Attention is called to the special bargain sale to start at the commissary stores at Culebra, Empire, and Gatun, on August 18.

The open hours at Culebra commissary are from 8 a. m. to 1 p. m., and from p. m. 3 to 7 p. m. All other commissaries are open from 8 a. m. to 1 p. m., and 3 p m. to 7 p. m. with the exception of tne Cristobal commissary, which is open from 8 a. m. to 12.30 p. m., and from 2 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning August 12.

FRESH MEATS.	Price.
Mutton—Stewing per pound	6
Shoulder, neck trimmed off, (4 pounds and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter,neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing, per pound	10
Shoulder, for roasting (not under 4 pounds), per pound	12½
Chops, shoulder, per pound	16
Chops, per pound	24
Loin, for roasting, per pound	24
Cutlets, per pound	28
Pork—Loin chops or roast, per pound	14
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	8
Corned, No. 1, per pound	12
Corned, No, 2, per pound	10
Chuck roast (3 pounds and over), per pound	12
Pot roast, per pound	12½
Rib roast, second cut (not under 3½ pounds), per pound	16
Rib roast, first cut (not under 3 pounds), per pound	18
Sirloin roast, per pound	19
Rump roast, per pound	19
Porterhouse roast, per pound	20
Steak, chuck, per pound	12½
Round, per pound	13
Rib, per pound	18
Sirloin, per pound	19
Rump, per pound	19
Porterhouse (not less than 1½ pounds), per pound	20
Tenderloin (Western), per pound	24

MISCELLANEOUS.

Caviare, Russian per tin	47, 89
Livers—Beef, per pound	7
Calf, each	60
Half, each	30
Steak, Hamburger, pkg	13
Sausage—Bologna, per pound	10
Frankfurter, per pound	12
Lieberwurst, per pound	10
Devonshire Farm	17
Sweetbread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	†28
one-half dozen only	†15
Bluefish, fresh, per pound	14
Halibut, fresh, per pound	15
Shads, fresh, each	70
Shad roes, fresh, per pair	35

POULTRY AND GAME.

Chickens—Fancy roasting, milk fed, large, each	1.25
Fancy roasting, milk fed, med., each	1.00
Fancy roasting, corn fed, about 4½ pounds, each	90
Fowls, each 60, 70, 80, 90,	1.00
Ducks, Western, about 4½ pounds, each	1.00
Broilers, milk fed, each	60
corn fed, each	55
Turkeys, per pound	26
Squabs, each	35
Capons	2.10
Fryers, corn fed	60
Partridges, each	50
Grouse, each	50

CURED AND PICKLED MEATS.

Ham—German, Westphalia, per pound	36
Sugar cured, per pound	18
Sliced, per pound	20
Half, for boiling, per pound	19
Boiled, per pound	26
Hocks, per pound	‡8
Bacon—Breakfast, whole piece, per pound	22
Breakfast, sliced, per pound	23
Pork salt family, per pound	14
Ox Tongues each	1.00
Pig's feet, per pound	9
Tongues, per pound	14
Sliced bacon in 1-pound tins, per tin	30
In 1-pound jars, per jar	30

DAIRY PRODUCTS.

	Price.
Butter—Creamery special, per pound	30
Cheese—Roquefort, per pound	38
Philadelphia cream, cake	18
Young America, per pound	18
Swiss, per pound	26
Edam, each	1.00
Edam, in tins, tin	25
Neufchatel, cake	6
Gouda per pound	34
Milk (Certified), per bottle	**25
Buttermilk, bottle	**15
Ice cream, quart	‡25
½-gallon	‡50

VEGETABLES AND FRUITS.

Beets, per pound	6
Corn, green, per doz	24
Cabbage, per pound	4½
Cucumbers, per pound	10
Lettuce, per pound	12
Onions, per pound	5
Potatoes, white, per pound	4½
sweet, per pound	2
Pears, Alligator, each	6
Peppers, green, per lb	7
Rhubarb, per pound	3
Yams, per pound	3
Cantaloupes, each	10
Grapefruit, each	4
Lemons, dozen	24
Limes, per 100	80
Oranges, California, per dozen	†42
Watermelons, each	30

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*Indicates reduction from last list.
**Indicates 5 cents allowed for return of bottle.
†Indicates advance on last list.
‡Sold only from commissaries; no orders taken for delivery.

Misdirected Letters.

ANCON, C. Z., August 15, 1911.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received in the office of the Director of Posts, and may be secured upon request of the addressee:

Allaire, Maj. W. H.
Atherley, Arnold
Bach, Fritz
Clark, Bernard
Curry, Larry
Dagley, F. H.
Grayhom, W.
Hamel, Richard
Hamer, John L.
Hanson, Mrs. Louise Fanger
Joyce, Pat
Kelley, W. E.
Lenrett, Hugh (2)
McKenzie, John N.
Meeks, Nancy
Milford, Mrs. J. D. (pkg.)
Morrow, J. E.
Nelson, Ernest B. (pkg.)
Peterson, Mr.
Sargent, Don C.
Spence, Author
Sweeney, Mrs. Anna
Tromhaltz, R.
Valpy, Miss E.
Weishofer, J.
Witmer, Jennie

Materials for Sale.

There is on hand at the storehouse for obsolete material, at Mount Hope, C. Z., an assortment of various classes of material. Sales have been effected, from time to time, of articles that would be serviceable for use on plantations and roadbuilding projects by parties living in the Republic of Panama. The articles on hand can be grouped under the following general classes:

Hand tools—carpenter, blacksmith, and tinner's.
Fittings and plumber's supplies.
Light and heavy hardware.
Track material.
Shop tools.
Stationery and printer's supplies.
Office, hotel, and household furniture.
Oils.
Marine supplies.
Surveyor's supplies.

Also, the following plant and equipment stock:

Hand blowers.
Rock channelers.
McCully rock crushers.
Air cylinders.
Rivet heaters.
Hot water heater.
Fanning mill.
Unloader ballast plows.
Hay rake.
Wheel scrapers.
French locomotives.
Types of engines from 12 to 75 horse power.
Numerous old French boilers, representing six different types.

Work of Unloaders in Central Division.

The following statement shows the number of Lidgerwood cars unloaded by the Central Division during the month of July, 1911:

LOCATION.	No. of unloaders.	No. of trains.	No. of cars.
Balboa	3	1,000	20,000
Miraflores	3	735	14,700
Bas Obispo	4	1,029	21,590
Total	10	2,764	56,290

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to changes

NEW YORK TO CRISTOBAL.

Ancon	P. R. R.	Thursday	Aug. 10
Panama	P. R. R.	Saturday	Aug. 12
Advance	P. R. R.	Friday	Aug. 18
Colon	P. R. R.	Thursday	Aug. 24
Allianca	P. R. R.	Wednesday	Aug. 30
Panama	P. R. R.	Tuesday	Sept. 5
Advance	P. R. R.	Monday	Sept. 11
Colon	P. R. R.	Monday	Sept. 18
Allianca	P. R. R.	Saturday	Sept. 23
Panama	P. R. R.	Friday	Sept. 29
Advance	P. R. R.	Thursday	Oct. 5
Colon	P. R. R.	Thursday	Oct. 12
Allianca	P. R. R.	Wednesday	Oct. 18

CRISTOBAL TO NEW YORK.

Allianca	P. R. R.	Friday	Aug. 18
Panama	P. R. R.	Thursday	Aug. 24
Advance	P. R. R.	Wednesday	Aug. 30
Colon	P. R. R.	Tuesday	Sept. 5
Allianca	P. R. R.	Monday	Sept. 11
Panama	P. R. R.	Sunday	Sept. 17
Advance	P. R. R.	Saturday	Sept. 23
Colon	P. R. R.	Saturday	Sept. 30
Allianca	P. R. R.	Friday	Oct. 6
Panama	P. R. R.	Thursday	Oct. 12
Advance	P. R. R.	Tuesday	Oct. 17
Colon	P. R. R.	Tuesday	Oct. 24
Allianca	P. R. R.	Monday	Oct. 30

NEW YORK TO COLON.

Metapan	U. F. C.	Thursday	Aug. 10
Prinz Joachim	H.-A.	Saturday	Aug. 12
Zacapa	U. F. C.	Thursday	Aug. 17
Prinz Eitel Friedrich	H.-A.	Friday	Aug. 18
Trent	R. M.	Saturday	Aug. 10
Almirante	U. F. C.	Thursday	Aug. 24
Prinz Aug. Wilhelm	H.-A.	Saturday	Aug. 26
Oruba	R. M.	Saturday	Sept. 2
Santa Marta	U. F. C.	Thursday	Aug. 31
Prinz Sigismund	H.-A.	Friday	Sept. 1
Metapan	U. F. C.	Thursday	Sept. 7
Prinz Joachim	H.-A.	Saturday	Sept. 9
Zacapa	U. F. C.	Thursday	Sept. 14
Prinz Eitel Friedrich	H.-A.	Friday	Sept. 15
Almirante	U. F. C.	Thursday	Sept. 21

COLON TO NEW YORK.

Santa Marta	U. F. C.	Thursday	Aug. 17
Prinz Sigismund	H.-A.	Saturday	Aug. 19
Oruba	R. M.	Tuesday	Aug. 22
Metapan	U. F. C.	Thursday	Aug. 24
Prinz Joachim	H.-A.	Tuesday	Aug. 29
Zacapa	U. F. C.	Thursday	Aug. 31
Prinz Eitel Friedrich	H.-A.	Saturday	Sept. 2
Clyde	R. M.	Tuesday	Sept. 5
Almirante	U. F. C.	Thursday	Sept. 7
Prinz Aug. Wilhelm	H.-A.	Tuesday	Sept. 12
Santa Marta	U. F. C.	Thursday	Sept. 14
Prinz Sigismund	H.-A.	Saturday	Sept. 16
Metapan	U. F. C.	Thursday	Sept. 21

NEW ORLEANS TO COLON.

Turrialba	U. F. C.	Saturday	Aug. 12
Abangarez	U. F. C.	Saturday	Aug. 19
Atenas	U. F. C.	Saturday	Aug. 26
Turrialba	U. F. C.	Saturday	Sept. 2
Abangarez	U. F. C.	Saturday	Sept. 9
Atenas	U. F. C.	Saturday	Sept. 16

COLON TO NEW ORLEANS.

Atenas	U. F. C.	Thursday	Aug. 17
Turrialba	U. F. C.	Thursday	Aug. 24
Abangarez	U. F. C.	Thursday	Aug. 31
Atenas	U. F. C.	Thursday	Sept. 7
Turrialba	U. F. C.	Thursday	Sept. 14
Abangarez	U. F. C.	Thursday	Sept. 21

Hamburg-American steamers leave Colon for New York via Kingston at 10 a. m. on sailing dates. The *Prinz August Wilhelm* and *Prinz Joachim* call at Santiago de Cuba, on both outward and homeward voyages.

The Leyland line steamer *Etonian* sails for Port Limon and New Orleans on, or about, August 26.

Royal Mail steamers leave for New York on alternate Tuesdays, at 10 a. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships for New York via Kingston on Thursdays at 11 a. m.; for Bocas del Toro on Mondays at 6 p. m.

CANAL RECORD

Volume IV. ANCON, CANAL ZONE, WEDNESDAY, AUGUST 23, 1911. No. 52.

The Canal Record

Published weekly under the authority and supervision of the Isthmian Canal Commission.

The Canal Record is issued free of charge, one copy each, to all employes of the Commission and Panama Railroad Company whose names are on the gold roll. Extra copies and back numbers can be obtained from the news stands of the Panama Railroad Company for five cents each.

Address all Communications
THE CANAL RECORD,
Ancon, Canal Zone,
Isthmus of Panama.

No communication, either for publication or requesting information, will receive attention unless signed with the full name and address of the writer.

NOTES OF PROGRESS.

Chairman's Report.

The report of the Chairman of the Isthmian Canal Commission for the month of July is published in full in other columns of this issue of THE CANAL RECORD. It gives a detailed account of the progress of Canal work in all departments and divisions.

Removal of Native Town of Old Balboa.

The native town, known as Old Balboa, near the Pacific entrance to the Canal, will soon have entirely disappeared, the site being required for dock improvements. All the leases of building lots in the settlement, made by the Canal Commission, have been cancelled, and the work of tearing down and removing the buildings has begun. The former holders of lot leases have been offered land in other localities, notably, West Culebra, Golden Green, near Empire, and Cowpens, upon which to rebuild, and where the offers are accepted, the Canal Commission undertakes to transport their building materials free. Originally, there were about 66 houses in the settlement, all privately owned, but not more than 25 per cent of the owners were actual residents. Of the residents, some had lived in the village for 25 years, or more.

The land on which the native town of Old Balboa stands was formerly part of a rural property aggregating 57 hectares, belonging jointly to José Isabel Cano and Buenaventura Correoso. It was sold to the first French Canal Company on March 19, 1883, for 15,000 Colombian pesos, but there was a reservation made of 2,500 square meters, the designation of which was left to the French company. A part of this tract, which is represented, more or less, by the site of the native village, has been acquired by the Canal Commission, and negotiations are in progress for the purchase of the remainder.

After the French began work at the Pacific entrance, they imported a number of Colombian laborers from Cartagena, who settled the place under the name of Cartagenita (Little Cartagena.) The place, however, was officially designated La Boca (the mouth) from its proximity to the southern entrance to the Canal, and it was so known up to April 30, 1909, when, by direction of the President of the United States, it was changed to Balboa. Since that time, it has been locally called "Old Balboa," to distinguish it from the American settlement known as "East Balboa," which has been built up about midway between Old Balboa and Panama. From a commercial standpoint, the native town of Old Balboa never had any importance, its trade being limited to a few Chinese stores and native shops, which supplied the Canal laborers and others living there, as well as a few squatters in the bush on the west side of the Canal.

Cement as an Iron Preservative.

Tests are to be made by the Commission to determine the value of cement mortar, applied to iron plates by the "cement gun," as a preservative of iron. Twelve plates, 63-8 by 14 inches, have been coated with a 1 to 3 mortar of cement and sand, after they were cleaned to grey metal by the sand blast process. Six of these have been covered with a ½-inch coating, and the remaining six with a one-inch coat on one side, and a 1½-inch coat on the other. Three plates of each kind have been sent to Balboa, and three to Cristobal, where they will be kept immersed in salt water to test the mortar method of preventing corrosion. Two plates of each kind will be taken from the salt water bath at the end of three months, and one-half of the coating will be removed to determine the condition of the metal. The duration of the test for the balance of the plates will be determined later.

Construction of North Guide Wall at Miraflores Locks.

Preparations are under way for the construction of the north guide wall at the Miraflores Locks. There is a small amount of excavation remaining to be done before the concrete work can proceed, particularly near the south end, but its removal will be only a matter of a few days. The first steps in the wall construction will be the building of a series of concrete piers, which will be sunk to bed rock at depths varying from 30 to 50 feet. The piers will be removed three in a row, similar to the bents of a trestle, and will be spaced 27 feet from center to center, with a total width of wall of 58 feet. The rows will be 15 feet apart, and, as the total length of the guide wall is 1,200 feet, about 250 piers will be required. Each cylinder will have a diameter of 7½ feet, and will be built by sinking 6-foot vertical, hollow, reinforced concrete sections, one on top of the other, in practically the same manner as the foundation piers for the new Panama railroad dock at Balboa are being constructed. The ground within the cylinders will be removed by bucket and shovel, and, as fast as the earth is taken out, the piers will progress downwards. When completed, the interior of the cylinders will be filled with concrete, making solid columns. Each length is notched, forming a shoulder, so that when placed on its fellow. there must be an exact fit. The piers will be tied together, both longtitudinally and crosswise, with reinforced concrete girders, having a depth of seven feet, and width of 2 5 and 3 feet, respectively.

The girders will support a reinforced concrete cellular structure, composed of chambers 54 feet wide and 13½ feet long in the clear, the walls ranging in thickness from 14 to 27 inches. The cells will be filled with loose rock and will be provided with two 18-inch openings in the sides of the panels and two other openings in the cross walls, all situated near the bottom, so that the water which has collected may be permitted to flow out in case the lake is emptied. The entire structure will be covered over and will support the tracks for the electric towing apparatus.

A Transportation Record in Culebra Cut.

On August 14, nine 35-car small dump trains, and twelve 27-car large dump trains were handled to Gatun; fifty-one 21-car Lidgerwood trains were handled to Chagres district dumps, making a total of 72 trains, 1,710 cars, and 57,357 cubic yards handled out of the north end of Culebra Cut on that date, which is the largest number of trains ever handled in one day out of that end of the Cut.

Work of Steam Shovel 257, P. R. R. Relocation.

For five consecutive months, February to June, 1911, inclusive, steam shovel No. 257, working in borrow pits on the Gatun ridge, Panama railroad relocation, made the best record for excavation on the Isthmus. In July, 1911, it was beaten by steam shovel No. 262 at work in the borrow pit at Monte Lirio on the relocation, which excavated 60,790 cubic yards in 25 days, of which 10,000 yards were earth, and the remainder rock. This shovel was run by F. H. Meisner, as engineer, with F. Cressey as craneman for a part of the month, and C. A. Wolfe, Jr., as craneman for the remainder.

The record of steam shovel No. 257 for the six months ending July 31 was, as follows:

MONTH.	Days worked.	Total by car record. Cu. yds.	CU. YDS. BY CROSS SEC.		
			Earth.	Rock.	Total.
February...	23	60,210	1,345	57,550	58,895
March.....	27	67,900	5,400	64,200	69,600
April......	24	61,100	....	62,540	62,540
May.......	26	72,030	....	70,030	70,030
June.......	26	65,260	....	58,850	58,850
July.......	25	62,540	....	57,270	57,270
Total....	151	389,040	6,745	370,440	377,185

The average per day for 151 days is 2,498 cubic yards, cross section measurement.

NOTES OF PROGRESS.

(Continued.)

During the six months noted, the shovel was run by J. H. LaRowe, and E. E. Austin was craneman. To make such a record, a steam shovel must be well served by cars, because "waiting for cars" is one of the elements of loss in the operation of a shovel. In this case, steam shovel No. 257 was served by three 25-car trains. These dump cars were 12-yard Olivers, but were figured as 10 cubic yards to secure daily car measurement report.

Sale of French "Scrap."

Representatives of several dealers in scrap metal are on the Isthmus, making investigations preparatory to bidding for the purchase of French "scrap" still remaining along the line of the Canal. Bids will be opened at the Washington office on September 5, and will be for the whole amount of "scrap" not already taken up on the property papers of the Commission, and credited to the French scrap account. It includes abandoned locomotives, dump cars, tanks, barges, boilers, girders, dredges, sheet iron, parts of old machinery, and miscellaneous junk. This material will be sold as it lies, all the expense of removal and transportation to be borne by the contractor, the rate per ton to be charged by the Panama railroad for transportaion to the seaports being $2.25 per ton of 2,000 pounds. Three years will be allowed in which to remove it.

Gatun Dam Spillway.

The concrete work in the Spillway of Gatun Dam is about 68 per cent completed, 151,700 cubic yards, out of a total of 225,000, having been placed at the close of the work on August 19. A statement of the amount laid each working day last week, and of the total in place, follows:

DATE.	Concrete Laid.	Hours worked.	No. Mixers.
August 14	120	12.00	2
August 15	152	14.00	2
August 16	180	14.00	2
August 17	100	9.00	2
August 18	172	10.30	2
August 19	224	15.00	2
Total	948	74.30	2
Previously reported	150,752		
Grand total	151,700		

Porto Bello Crusher.

A statement of the rock crushed at Porto Bello quarry during the week ending August 19, follows:

DATE.	Hours worked.	Cubic Yards.
August 14	3.05	1,317
August 15	3.00	1,294
August 16	2.38	1,089
August 17	2.55	1,217
August 18	2.35	1,078
August 19	3.15	1,233
Total	17.28	7,228

Sailing of the Ancon.

The sailing date of the *Ancon* has been set for Friday, August 25, 1911, at 3 p. m.

Removal of Houses in Gatun Lake Region.

Vacant Commission quarters and labor barracks in the Gatun lake region are being dismantled as rapidly as the material in them is disposed of by private sale, or can be used by the Commission in the reerection of buildings elsewhere. It is thought that there will be but a few Commission buildings left in the lake area after January 1, 1912.

At Bohio, Mamei, San Pablo, and Tabernilla, 25 or 30 buildings have already been sold or dismantled. The schoolhouse at Bohio has been torn down, because, in view of the approaching abandonment of the town on account of the filling of Gatun Lake, it has been decided not to continue the school there. Arrangements will be made for the instruction of the children elsewhere. Practically all quarters at Mamei have been taken down, in order to avoid the further expenditure of money for sanitary work at that point. There were only five white families in the place, and these were transferred to other localities.

CONCRETE WORK IN THE LOCKS.

About 61 per cent of the concrete for all the locks is in place, the amount at the close of the work on August 19, being 2,607,839½ cubic yards, out of a total of approximately 4,284,400. A total of 32,332 cubic yards of concrete was laid in the locks during the week ending August 19.

GATUN LOCKS.

A statement of the amount of concrete placed in the locks each working day for the week ending August 19, and of the total, follows; and a similar statement for the work in the Spillway of Gatun Dam is published elsewhere in this issue. The construction plant works 12 hours daily, and the auxiliary plant 9 hours.

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT. 2-cubic yard mixers			Large stone.	Total.
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
August 14	1,540	32.10	6	592	8.40	2	150	2,282
August 15	1,436	26.40	8	292	5.40	2	92	1,820
August 16	1,198	20.04	6	396	6.30	2	172	1,766
August 17	1,082	18.14	6	522	8.40	2	40	1,644
August 18	1,708	29.46	8	732	9.40	2	130	2,570
August 19	1,668	28.40	8	606	8.40	2	168	2,442
*Portable mixers	......	......	......	491	......	......	......	491
Total	8,632	155.34	7	3,631	47.50	2	752	13,015
Previously reported	......	......	......	......	......	......	......	1,529,392½
Grand total	......	......	......	......	......	......	......	1,542,407½

*The 491 yards shown for the portable mixers are reinforced concrete, and were placed on the following days: August 14th, 90; August 15th, 105; August 16th, 48; August 17th, 81; August 18th, 71½; August 19th, 95½.

PEDRO MIGUEL LOCKS.

Concrete work in the locks at Pedro Miguel is over 84 per cent completed, 707,371 cubic yards, out of a total of 837,400, having been placed at the close of work on August 19. The record for each of the six 8-hour working days of last week, follows:

DATE.	AUXILIARY PLANT.						Large stone.	Total.
	2-cubic yard mixers.			⅓-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers		
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
August 14	756	20.00	3	249	15.00	3	......	1,005
August 15	876	23.00	3	185	11.33	2	......	1,061
August 16	612	15.00	3	146	8.17	3	......	758
August 17	530	15.00	3	249	16.50	2	......	779
August 18	438	12.00	3	250	16.50	3	......	688
August 19	626	16.00	3	184	10.00	2	......	810
Total	3,838	101.00	3	1,263	77.50	2.5	......	5,101
Previously reported	......	......	......	......	......	......	4,441	702,270
Grand total	......	......	......	......	......	......	4,441	707,371

MIRAFLORES LOCKS.

Over 26 per cent of the concrete for the system of two twin locks at Miraflores was in place on August 19, the total amount on that date being 358,061 cubic yards, out of a total of approximately 1,362,000. The record for each of the six 8-hour working days of last week, follows:

DATE.	CONSTRUCTION PLANT. 2-cubic yard mixers.			AUXILIARY PLANT.							Total.
				2-cubic yard mixers.			⅓-cubic yard mixer.				
	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Concrete placed.	Hours worked.	No. of mixers	Large stone.	
	Cu. Yds.			*Cu. Yds.*			*Cu. Yds.*			*Cu. Yds.*	*Cu. Yds.*
Aug. 14	1,058	24.25	5	606	9.00	2	171	16.00	2	......	1,835
Aug. 15	1,394	27.67	5	636	12.00	2	157	13.00	2	......	2,187
Aug. 16	996	22.67	4	968	16.00	2	193	16.50	2	......	2,157
Aug. 17	1,216	25.90	5	972	14.17	2	209	16.50	2	......	2,397
Aug. 18	1,686	32.87	5	1,044	14.00	2	214	16.00	2	......	2,944
Aug. 19	1,574	37.33	5	972	14.00	2	150	10.00	2	......	2,696
Total	7,924	170.69	4.83	5,198	79.17	2	1,094	88.00	2	......	14,216
Previously reported	......	......	......	......	......	......	......	......	......	3,693	343,845
Grand Total	......	......	......	......	......	......	......	......	......	3,693	358,061

HOSPITAL POULTRY FARM.

Production of Eggs During the First Eighteen Months of Operation—Squab Raising.

The Ancon Hospital poultry farm has been in existence since January, 1910, starting with 200 Brown Leghorn hens and 15 cocks. In the following April, 100 hens and 10 cocks of the Rhode Island Red variety were added to the yard; one month later, a consignment of 230 Plymouth Rock hens and cocks was received, and in April, 1911, an addition of 100 fowls, imported from the States, was made to the Brown Leghorn family.

During the first 18 months of operation, namely, from January 1, 1910, to July 1, 1911, a total of 53,465 eggs, equivalent to about 4,445 dozen, was produced at the farm, of which the Leghorns laid 29,329 eggs, the Reds, 9,094, and the Plymouth Rocks, 15,042. The monthly average per hen for the same period—18 months—divided in their classes was, as follows: Brown Leghorns, 8.2 eggs; Rhode Island Reds, 7.7 eggs; Plymouth Rocks, 6.5 eggs. The monthly averages have ranged among the Leghorns from 2.8 eggs in September, 1910, to 14.5 in March, 1910; among the Reds, from 6.3 eggs in June, 1911, to 10.5 in April, 1910; among the Plymouth Rocks, from 4.8 eggs in December, 1910, to 9 in June, 1910. Nearly all the high averages were made shortly after the arrival of the fowls from the States, and upon their freedom from the confinement consequent to their trip. The Brown Leghorn family has proved a shade the best as egg producers.

In the 18 months ending June 30, 1911, seventy-two Brown Leghorns, 46 Reds, and 72 Plymouth Rocks died from various causes, leaving on hand at the end of June, 283 Leghorns, 78 Reds, and 146 Plymouth Rocks, a total of 507 hens and cocks. This includes 40 pullets of the Leghorn family raised on the farm, and now in the egg producing class. In addition, about 50 fowls have, at various times, been delivered to the hospital kitchen.

Chicken pox, dysentery, a diptheritic affection of the throat, and swellings over the eye, have been the cause of considerable mortality among the poultry, and inroads from these, and other diseases, must be constantly guarded against. The raising of young chicks after they are hatched has been attended with difficulties, and this feature of the poultry farm work is being given less attention. The incubators, introduced last year, could not be used with any degree of success.

The following table shows the number of dozen of eggs produced, the cost of running the poultry farm, and the approximate cost of the eggs per dozen, by months, for the seven months ending July 31, 1911:

	No. of Dozen.	Total Cost.	Cost per dozen. Approx.
January	287	$36.97	$0.13
February	243	28.33	11¾
March	247	28.81	11¾
April	281	29.16	10½
May	299	29.94	10
June	235	32.34	13¼
July	223	25.15	11¼

The average cost per dozen for the whole period mentioned has been about 11½ cents. The prevailing price of eggs at the commissary is 27 cents per dozen, indicating, on the basis of that figure, a saving of about 15½ cents per dozen, or about $280 for the seven months' period.

Last year, 48 pairs of pigeons were introduced at the poultry farm for the raising of squabs, and five more pairs were received from the Ancon Hospital laboratory, where they had been held for experimental purposes. They suffer less from disease than do the hens, and the original number remains practically intact. Fourteen squabs have been marked for raising. The birds are mainly of the Plymouth Rock Homer variety. The results from squab raising during the seven months ending July 31, 1911, are shown in the following table:

	Number.	Total Cost.	Approx. Cost per Squab.
January	2	$2.92	$1.46
February	10	1.70	.17
March	12	1.70	.14
April	5	1.70	.34
May	13	3.12	.24
June	33	3.12	.09½
July	4	2.85	.71
Total	79	$17.11	$0.21½

The prevailing price for squabs is about 35 cents apiece.

PERSONAL.

Mr. H. H. Rousseau will sail for the States on his annual leave of absence, on the *Panama*, on August 24.

Mr. Tom M. Cooke will sail on Thursday, August 24, on the *Panama*, on his annual leave of absence in the States.

Captain C. W. Barber, accompanied by Mrs. Barber and their son, returned to the Isthmus on the *Panama*, on August 18.

Free Lecture.

The fourth of the course of free lectures for the people of Colon will be delivered by Dr. M. E. Connor in the schoolroom of Christ Church on Thursday evening, August 31. The lecture will be illustrated with lantern slides. The series was begun in May, and the subjects thus far dealt with are sanitation, tuberculosis, and the care of the teeth. Following the lecture, there will be vocal and instrumental music.

Chauffeurs.

The Board of Local Inspectors will hold an examination for chauffeurs' licenses at the Administration Building, Ancon, on Wednesday, August 30, at 2 p. m. All applicants are required to have their application blanks properly filled out and endorsed before entering the examination. For information, address Board of Local Inspectors, Ancon, C. Z.

To All Masons.

The Pedro Miguel Masonic Club requests your attendance at the funeral services of the late brother John C. Blair, to be held at Ancon on Sunday afternoon, August 27, at 2 o'clock. The Masonic burial rites will be conferred by Sojourners' Lodge, No. 874, of Cristobal. A special train will leave Colon at 11 a m., and, returning, will leave Panama at 5 p m., observing the regular passenger schedule in transit. A committee will meet the special train as an escort to the chapel.

CLAUD HOLLICK,
Secretary and Treasurer.

PARAISO, C.Z., August 21 1911.

Missing Man.

Any one having information regarding the whereabouts of R. B. Winters, who is supposed to have come to the Isthmus of Panama about two years ago, is requested to communicate with the American Legation, Panama.

EXECUTIVE ORDER

Against the Promotion of Fights Between Bulls, Dogs, or Cocks.

By virtue of the authority vested in me, I hereby establish the following Order for the Canal Zone:

SECTION 1. Any person who sets on foot, instigates, promotes, or carries on any fights between cocks or other birds, or any dog fight, or bull fight, or fight between other animals; or who does any act as assistant, umpire, or principal in furtherance of any fight between any such animals, shall be punished by a fine not to exceed FIFTY DOLLARS, or by imprisonment not to exceed THIRTY DAYS, or by both such fine and imprisonment, in the discretion of the court.

SECTION 2. This Order shall take effect thirty days from this date.

WM. H. TAFT.

THE WHITE HOUSE,
August 4, 1911.
[No. 1392.]

Ancon Crusher.

A statement of the rock crushed at Ancon quarry during the week ending August 19, follows:

DATE.	Hours worked.	Cubic Yards.
August 14	5.00	2,146
August 15	4.50	2,317
August 16	5.40	1,972
August 17	6.00	2,221
August 18	6.40	2,582
August 19	5.35	2,010
Total	33.45	13,248

Obituary.

John C. Blair, an American, employed as a carpenter in the Pacific Division, fell from the center wall at the Pedro Miguel Locks to the lock floor, a distance of about 30 feet, at noon, Wednesday, August 16, sustaining injuries which resulted in his death at Ancon Hospital on the following day. He was about 45 years of age, was married, and had been on the Isthmus one year and four months. His wife, living at present at Head Wallace Bay, Nova Scotia, and a son, who is in the employ of the Panama Railroad Company, with residence at Colon, survive him. He was a member of a Scranton (Pa.) lodge of the Independent Order of Odd Fellows, and also of the Masonic fraternity.

Semore McArthur, an American, employed in the Mechanical Division, with residence at Tabernilla, died at Ancon Hospital on Monday, August 14, of chronic nephritis and organic disease of the heart. He was 49 years of age, had been in the Canal service for about five years, and is survived by his wife, now on the Isthmus.

The death of James Monroe Kreiter, who was employed in the printing office of the Quartermaster's Department on the Isthmus, 1908–1910, occurred at his home in Washington, D. C., on August 6, aged 55 years. He was a native of Pennsylvania, and removed from that state to Washington about 17 years ago, procuring employment—first with the *Washington Times*, and later with the *Washington Post*. He was a member of Columbia Typographical Union, and, in August, 1901, represented the Philadelphia union at the international convention held in Birmingham, Ala. Two sons, Robert E. P., and James M., Jr., survive him. The death of his wife occurred a few months ago.

CANAL WORK IN JULY.

Monthly Report of the Chairman and Chief Engineer to the Secretary of War.

CULEBRA, C. Z., August 15, 1911.

The Honorable the Secretary of War,
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of July, 1911:

Department of Construction and Engineering.

The following table summarizes the principal items of construction work accomplished by the Atlantic, Central, and Pacific Divisions during the month:

ITEM.	Unit.	Atlantic.	Central.	Pacific.	Total.
Work excavation, dry	Cubic yards	65,022	1,343,189	147,956	1,556,167
Work excavation, wet	Cubic yards	425,195	16,928	520,692	962,815
Total work excavation	Cubic yards	490,217	1,360,117	668,648	2,518 982
Plant excavation, dry	Cubic yards	....	....	....	....
Plant excavation, wet	Cubic yards	....	....	....	....
Total plant excavation	Cubic yards	....	....	....	....
Total Canal excavation	Cubic yards	....	....	....	....
Material placed in dams	Cubic yards	526,943	....	94,237	621,180
Concrete placed in locks and dams	Cubic yards	76,981	....	52,746	129,727
Explosives used	Tons (Gross)	74.13	204 64	47.62	326.39
Rock drilled	Feet	59,923	375,374	88,701	523,998
Tracks removed	Miles	....	7.06	....	7.06
New tracks laid	Miles	2.39	13.89	4.68	20.96
Rock crushed	Cubic yards	43,352	....	61,362	104,714
Cement used	Barrels	75,090	321	59,453	134,864
New roads built	Miles	....	....	....	....
Water mains laid	Feet	3,324	150	80	3,554
Sewers laid	Feet	1 989	....	27	2,016
Open drains and ditches dug	Feet	38,227	1,000	13,537	52,764
Average daily force	....	7,020	7,567	4,434	19,021
Average rainfall	Inches	10.62	5.96	6.74	6.87

First Division, Office of the Chief Engineer.

MASONRY AND LOCK STRUCTURES.

The contracts for work under this subdivision are to be inspected by the force of the General Purchasing Officer in the United States. The erection has, up to the present time, been done by the division engineers. The field work consisted of supervision of tests of rising stem valves at Gatun, and inspecting and checking the position of fixed irons in the masonry of the different locks.

LOCK GATES AND PROTECTIVE DEVICES.

Under the contract with the McClintic-Marshall Construction Company, the mill and shop inspection has been in progress in the United States, the technical work being in charge of a force organized directly under this office. The shop work has made good progress, up to July 15 a total of 28,000 tons of structural material having been accepted. The first eight leaves for Gatun and Pedro Miguel, namely, the upper guard gates, 54 feet 8 inches high, have been practically completed in the shop and shipped. Eight of the 77-foot leaves for the upper and middle gates of Gatun upper lock have been practically completed in the shop, and the greater part of the material has been accepted. For the safety gates and lower gates of Gatun upper lock, 85 per cent of the shop work was completed, and more than half accepted. Of the upper and middle gates at Pedro Miguel, 79 feet high, 30 per cent of the shop work was done. Up to July 15, eight thousand four hundred and eighty-six tons of material had been shipped to the Isthmus.

In the field no work has yet been done toward erecting the gates at Pedro Miguel. At Gatun upper lock, the erection of one leaf of the upper guard gate has reached its full height, with the exception of the top girder, and a few of the intercostal frames; and sheathing has made good progress. The other leaf in the same gate has been erected six panels high, including sheathing, while the corresponding leaves in the twin lock have been erected to the height of four panels and partially sheathed.

Progress has also been made in adjusting the bearing plates in the hollow quoins which are babbitted in place in the reaction castings which transmit the thrust to the masonry. The adjustment, in general, has been very good.

OPERATING MACHINERY AND ELECTRICAL INSTALLATION.

The inspection force reporting directly to this office has cared for the technical matters relating to the inspection, as follows:

(1) For the rising stem valve and cylindrical valve machinery purchased under circular No. 614: The machine work is progressing rapidly, and it is anticipated that the two sample machines will be given factory test some time during August. Certain of the motors and limit switches to go with these machines have been received on the Isthmus, and will be tested as soon as all are available for the purpose.

(2) For the rack railway material purchased under circular No. 619: The manufacture of material for the different classes under this circular has been in progress, with the exception of Classes 5 and 6, for which award has not yet been made.

(3) For the gate operating and miter forcing machines purchased under circular No. 627: The first of these has not yet reached a stage at which inspection is necessary. Inspection has begun on the sample machines of the second class.

(4) For the gates and girder hoisting machines for the emergency dams: The organization will be expanded to include this inspection so soon as need shall arise. As yet, no manufacture of material has begun.

EMERGENCY DAMS.

A skeleton organization for the inspection, in the United States, of the material for the emergency dams to be purchased under circular No. 616 has been organized in the United States, reporting in technical matters directly to this office. As yet, the work has consisted in checking shop drawings made by the contractor.

AIDS TO NAVIGATION.

During the month, 146 acres of land have been cleared near Frijoles and Mamei for sites for beacons and references for buoys; 50,720 lineal feet of trochas have been cut, and the necessary surveys and profile taken. The average cost of clearing for the month has been about $13.50 per acre. The construction of the steel concrete forms for the range towers for the Atlantic and Pacific Divisions is under way at the Gorgona shops.

Atlantic Division.

GATUN LOCKS.

Excavation—Crane excavation in the lower lock, and shovel excavation for obtaining clay for back fill, were continued. A total of 5,994 cubic yards was removed by crane, and 13,383 cubic yards by shovel. On July 31, the total excavation amounted to 5,888,648 cubic yards, of which 5,035,328 cubic yards were removed from the prism. The excavation in the locks was 99.75 per cent completed.

Back fill—Back filling behind the side walls of the upper, middle, and lower locks, and in the center wall of the upper lock, was continued. The quantity placed during July aggregated 63,041 cubic yards, increasing the total to 606,617 cubic yards. On July 31, the back filling was 37.56 per cent completed.

Receiving and Issuing Material—The consumption of rock during the month exceeded the receipts by 19,813 cubic yards, and the consumption of sand exceeded the receipts by 8,655 cubic yards. The receipts of cement exceeded the consumption by 5,713 barrels.

Mixing and Placing Plants—Both plants, and all portable mixers, were kept in satisfactory operation during the month.

Power Plant and Pumps—The operation of the power plant and pumps was satisfactory.

Iron and Steel Work—During the month, 218.4 tons of fixed steel, 83.7 tons of reinforcing rails, and 36,889 feet of reinforcing rods were placed, and 420 linear feet of electrical track were laid.

Concrete Work—There was an increase of 15,740½ cubic yards in the amount of concrete laid, as compared with the figures for the preceding month. The daily average for the 25 working days was 2,842 cubic yards, as compared with a daily average during June of 2,127 cubic yards. The total amount of concrete placed during the month was 71,045½ cubic yards, including 5,370½ cubic yards of large stone. The bucket measure-

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)	11.34	8.50
Average number of hours per day worked, per strand of cableway laying concrete and large stone (actual working time)	6.23	....
Average number of mixers per day	7.00	2.00
Average hourly output per mixer (actual working time) cu. yds.	60.78	75.76
Average amount of concrete and large stone laid per hour, per strand of cableway (actual working time) cu. yds.	30.19	....
Large stone laid, cu. yds	2,894½	2,476
Concrete laid, cableways, cu. yds.	35,684	....
Concrete laid, through chute into dump cars, cu. yds.	12,172	....
Concrete laid, derricks, cu. yds.	....	2,030
Concrete laid, dump cars, cu. yds	....	14,838
Concrete laid, portable mixers	....	1,476½
Total amount of concrete and large stone laid, cu. yds.	50,750½	20,820½

ment exceeded the place measurement by 525½ cubic yards. Of the total concrete, 8,611½ cubic yards were placed in the upper lock, 20,214 cubic yards in the middle lock, and 42,220 cubic yards in the lower lock. The concrete work for the entire lock system was 71.72 per cent completed at the end of July.

GATUN DAM.

Construction during the month increased the total fill, as determined by cross sections of the material in place, by 526,943 cubic yards. An arbitrary reduction of 40,000 cubic yards was made for shrinkage in the low sections of the Dam not covered by monthly cross section. One-third of this was charged against dry fill, and two-thirds against wet fill. At the end of the month, the net yardage in place was 14 819,977 cubic yards.

Hydraulic Fill—The dredges increased the hydraulic fill by 324,947 cubic yards. The total hydraulic fill in place July 31 was 7,736,939 cubic yards.

Dry Fill—Material received from the Central Division, the Locks, Mindi, and steam shovel No. 134, amounting to 201,996 cubic yards, was placed on the north and south toes of the Dam, east and west of the Spillway, making the total dry fill in place, 7,083,038 cubic yards.

GATUN SPILLWAY.

Excavation—In preparing foundations of the Spillway dam, 903 cubic yards of rock were removed by hand. On July 31, the total Spillway excavtion amounted to 1,584,866 cubic yards.

Concrete—The work of placing concrete was continued, the amount placed during the month aggregating 5,935 cubic yards, which increased the total to 149,681 cubic yards. The concrete work for the Spillway was 66.5 per cent completed.

HARBOR AND CHANNEL SECTION.

Excavation Below Sea Level at Mindi—During the month, two steam shovels removed 3,190 cubic yards of earth and 54,935 cubic yards of rock from the Canal prism. In addition, 1,000 cubic yards of earth were sluiced by the pumping plant.

Dredging from the Ocean to Mindi—Four dredges removed 399,470 cubic yards of earth and 24,725 cubic yards of rock from the Canal prism. In addition, dredge *No. 86* placed 124,949 cubic yards in the Colon fill. On July 31, forty feet of water could be carried from zero to zero plus 2,000 feet; 35 feet to mile 3 plus 3,600 feet; 30 feet to mile 4 plus 750 feet; 20 feet to mile 5 plus 2,438.9 feet, at the junction with the French canal.

PORTO BELLO.

PERFORMANCE OF ROCK CRUSHER PLANT.

Length of working days—hours	8.00
Average number of hours worked per day	4.70
Average number of cubic yards per hour of working day	216.80
Average number of cubic yards per working hour	369.20
Maximum day's output, (6 hours 13 minutes) cu. yds	2,437.00
Average day's output (25 days) cu. yds	1,734.00
Average hourly output, (169 hours 51 minutes) cu. yds	255.20
Total output for the month, cu. yds	43,352.00

SAND, STONE, AND CEMENT SERVICE.

In connection with this service, plant steamed 6,265 miles, handled 545 barges, and carried 2,425 passengers.

WEST BREAKWATER COLON.

Fifty-two thousand and five cubic yards of material were excavated, of which amount 50,201 cubic yards were placed in the breakwater, and 1,804 cubic yards in track fill. The double track trestle was extended 607 linear feet. On July 31, the trestle extended 5,972 feet from shore. The total amount of rock dredged and dumped on the west breakwater to July 1, was 619,152 cubic yards. During the month, 24,725 cubic yards were dredged and dumped, increasing the total to 643,877 cubic yards. The amount of dry fill placed to August 1 was 406,069 cubic yards.

NOMBRE DE DIOS.

During the month, 50 barges containing 24,513 cubic yards of sand, were shipped to Gatun.

MUNICIPAL ENGINEERING.

The reservoirs, water mains, sewers, roads, and oil pipe lines were maintained and extended, as required, to facilitate construction work. Work was continued on the Colon municipal improvements.

Central Division.

During the month of July, the total amount of material excavated in the Central Division was 1,360,117 cubic yards, of which 158,901 cubic yards were classified as earth, and 1,201,216 cubic yards as rock. Of this quantity, 1,337,833 cubic yards were removed by steam shovels, and contractors removed 16,928 cubic yards by sluicing and 5,356 cubic yards by hand. The total—1,360,117 cubic yards—consisted of primary excavation for the Canal prism.

The daily average number of steam shovels at work during the month was 40.70, and the total number of shovel days was 1,017½, as compared with 40.92 shovels at work during the month of June, with 1,064 shovel days.

For comparison with the work done by steam shovels during the corresponding month of the previous year, the following table has been prepared:

Period.	Excavated by shovels.	Classification of material.		Av. No. of shovels at work	W'k'g days.	Av. yards per shovel day.
		Rock.	Earth.			
	Cu. Yds.	Cu. Yds.	Cu. Yds.			C. Y.
1910: July	1,318 873	1,027,669	291,204	42.84	25	1,231.40
1911: July	1,337 833	1,194,420	143,413	40.70	5	1,314.82

Rainfall at Empire: 1910, 12.60 ins.: 1911, 4 00 ins.

The above table shows the average output per shovel to be 6.77 per cent greater in July, 1911, than in the corresponding month of the previous year.

The total amount of material excavated from the prism in the Culebra section of the Central Division in July, 1911—1,337,833 cubic yards—was the highest record in that section for the month of July, the previous high record for the month having been in July, 1909, when 1,200,828 cubic yards were removed.

The total estimated amount of material to be removed in the Central Division, according to the revised estimate of July 1, 1911, was 101,801,296 cubic yards, and up to August 1, 1911, 78,698,352 cubic yards had been removed, leaving 23,102,944 cubic yards to be removed in order to complete all excavation in the Central Division. From these figures, it will be seen that 77.31 per cent of all excavation in the Central Division had been completed up to the close of the month of July, and 22.69 per cent remained uncompleted.

Considering the two sections which compose the Central Division, the excavation completed, and that to be completed, at the close of July operations, was, as follows:

CULEBRA SECTION.	Cu. Yds.
Completed	66,852,698
To be completed	22,591,307

CHAGRES SECTION.	Cu. Yds.
Completed	11,845,654
To be completed	511,637

From the above figures, it will be seen that the Culebra section, locally known as the "Culebra Cut," was 74.74 per cent completed, with 25.26 per cent to be completed; the Chagres section was 95.86 per cent completed, with 4.14 per cent to be completed.

During the month, 53,466 cubic yards of material were hauled from the Canal prism and dumped in the embankment for the roadbed of the relocated Panama railroad. The total amount of spoil from the Central Division used for this purpose, at the close of the month, was 3,883,603 cubic yards. The Central Division also delivered at Gatun 203,718 cubic yards of rock and earth for use in the construction of the Dam, making the total for this purpose at the end of July, 3,992,836 cubic yards.

The daily average number of laborers at work in the whole division during the month was 6,784, and the daily average number of gold employes, 783.

Pacific Division.

DISTRICT NO. 1—LOCKS AND DAMS.

Excavation—The total excavation during the month amounted to 147,956 cubic yards.

Filling and Embankment—During July, 14,865 cubic yards of dry filling were added to the prism of the west dam at Pedro Miguel, increasing the total amount of material in place at the close of the month to 275,717 cubic yards. The back fill at Pedro Miguel was increased by 14,705 cubic yards, the total in place at the end of the month amounting to 298,030 cubic yards.

At Miraflores, 54,415 cubic yards were added to the dry fill in the toes, and 24,957 cubic yards to the hydraulic fill in the core of the west dam, making the totals at the end of the month, 870,914 cubic yards, and 607,689 cubic yards, respectively. The back fill was increased by 340 cubic yards, the total aggregating 174 941 cubic yards at the end of the month.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT PEDRO MIGUEL.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)	8.00	8.00
Average number of hours per day, worked laying concrete and large stone (actual working time)	5.32	5.26
Average number of mixers per day	....	5.12
	Cu. Yds.	Cu. Yds.
Average hourly, output per mixer (actual working time)	....	27.99
Average amount of concrete and large stone laid per hour, per chamber crane (actual working time)	53.62	....
Large stone laid	4.00	35.00
Concrete laid	7,126.00	12,741.00
Total concrete laid	7,130.00	12,776.00

Permanent plant consisted of two chamber cranes, placing.

Auxiliary plant consisted of three 2-cubic yard, and three ½-cubic yard mixers; auxiliary placing plant consisted of ½-cubic yard mixers, dumping directly into forms, averaging 2.08 units per day, and locomotive cranes and derricks, averaging 2.84 units per day.

Pedro Miguel Locks—The general back filling behind the east and west walls was continued, as was also the filling in of the middle wall with crushed stone and sand. During the month, the amount of iron placed aggregated 153,362 pounds.

Concrete Work—The total amount of concrete and large stone laid at Pedro Miguel was 19,906 cubic yards, as compared with 18,243 cubic yards during June. The concrete was placed, as follows: Four thousand two hundred and fifty-eight cubic yards in the east wall; 7,302 cubic yards in the center wall; 5,445 cubic yards in the west wall; 1,232 cubic yards in the floors, and 1,669 cubic yards in the southwest wing wall.

Miraflores Locks—The McClintic-Marshall Construction Company completed the erection of chamber crane No. 4. The company also dismantled berm crane "E" at Pedro Miguel, and commenced the reerection of same on the east side of Miraflores Locks. Chamber crane No. 2 began laying concrete in the middle wall on July 13, the concrete being supplied by the two 2-cubic yard mixers which constitute the auxiliary mixing plant located in the east wall. Dry excavation in the lower lock was continued, and one steam shovel was engaged in excavating for the middle wall, north of the upper head wall. Filling was continued in the east and west toes of the west dam. During the month, the amount of iron placed aggregated 167,026 pounds.

Concrete Work—The total amount of concrete and large stone laid was 32,840 cubic yards, as compared with 26,536 cubic yards during June. The concrete was placed, as follows: Seven thousand three hundred and twelve cubic yards in the east wall; 6,700 cubic yards in the center wall; 17,729 cubic yards in the west wall, and 1,099 cubic yards in the floors.

OPERATION OF THE PERMANENT AND AUXILIARY CONCRETE CONSTRUCTION PLANTS AT MIRAFLORES.

	Permanent Plant.	Auxiliary Plant.
Length of working day (hours)	8.00	8.00
Average number of hours per day worked laying concrete and large stone (actual working time)	6.46	6.40
Average number of mixers per day	4.20	3.88
	Cu. Yds.	Cu. Yds.
Average hourly output per mixer (actual working time)	53.50	23.59
Average amount of concrete and large stone laid per hour, per berm, or chamber crane (actual working time)	59.20	....
Large stone laid	....	....
Concrete laid	27,003.00	6,366.00
Total concrete laid	27,003.00	6,366.00

Auxiliary mixing plant consisted of 2-cubic yard mixers, averaging 0.64 units per day, and ½-cubic yard mixers, averaging 2.6 units per day. Auxiliary placing plant consisted of ½-cubic yard mixers, discharging directly into forms, averaging 2.6 units per day, and cranes and derricks, averaging 0.32 units per day.

DISTRICT NO. 2—DREDGING.

The following is a statement of the output of the five dredges which were in operation during the month, and of the amount of material excavated hydraulically:

Dredge.	Type.	Work.		Plant.		Total.	Remarks.
		Earth.	Rock.	Earth.	Rock.		
		Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds,	Cu. Yds.	
Cardenas	Dipper	80,000	....	3,547	....	83,547	Place measurement
Marmot	Ladder	69,886	....	54,307	....	124,193	Place measurement
Badger	Ladder	89,769	....	....	....	89,769	Place measurement
Mole	Ladder	16,025	5,675	....	....	21,700	Scow measurement
Culebra	Suction	189,565	....	23,883	....	213,448	Scow measurement
Total	....	445,245	5,675	81,737	....	532 657	
Hydraulic excavation	....	*69,772	....	....	....	69,772	Place measurement
Grand Total	....	515,017	5,675	81 737	....	602,429	

*Excavated from Canal prism, south of Miraflores lock site.

Chamé Sand Excavation—Approximately 32,300 cubic yards of sand were excavated at Punta Chamé, and delivered at Balboa.

DISTRICT NO. 3—MUNICIPAL AND SANITARY ENGINEERING.

The reservoirs, water mains, sewers, roads, and oil pipe lines were maintained and extended, as required, to facilitate construction work.

DISTRICT NO. 4—ANCON QUARRY.

PERFORMANCE OF ROCK CRUSHER PLANT.

	Hours.
Length of working day (hours)	8.00
Average number of hours per day (actual working time)	6.72
Average number of cubic yards crushed per hour of working day	306.81
Average number of cubic yards crushed per working hour	365.45
Total output for the month	61,362.00

Relocation of Panama Railroad.

During the month, 357,135 cubic yards of material were excavated, increasing the total excavation at the close of the month to 7,853,942 cubic yards, and 379,050 cubic yards of material were placed in embankment, increasing the total for this purpose to 13,575,436 cubic yards.

The daily average number of steam shovels at work was 8.72, and the total number of working days was 25.

For comparison with the work done by steam shovels during the preceding month, and during the corresponding month of the previous year, the following table has been prepared:

Period.	Excavated by shovels.	Classification of material.		Av. No. of shovels at work.	W'kg days.	Av. yards per shovel day.
		Rock.	Earth.			
1910:	Cu. Yds.	Cu. Yds.	Cu. Yds.			C. Y.
July	197,069	69,365	127,704	7.44	25	1,059
1911:						
June	370 440	254,910	115,530	9.71	26	1,467
July	338,760	251,930	86,830	8.72	25	1,554

During the month, 901 feet of temporary trestle were driven, and work on bridges and culverts was continued. One thousand five hundred and ninety-eight linear feet of 70-pound track were relaid by 90-pound track, the total of 70-pound and 90-pound track at the end of the month being 134,698 linear feet, and 42,043 linear feet, respectively. The force averaged 2,125 men, in addition to those employed by contractors.

Quartermaster's Department.

LABOR.

Arrangements were made by the recruiting agent of the Commission in Barbados to recruit men from the small islands adjacent to Barbados. Two shipments of 50 and 146 men, respectively, were received during the month, and were assigned to the Panama railroad relocation. From latest advices received, it is probable that the full quota of one thousand men asked for, can be obtained.

QUARTERS.

There was a further decrease in the number of applications for family quarters, there being 596 applications on the No. 2 list, as compared with 623 for the preceding month. Two additional type-5 houses at Gorgona were converted into use as nonhousekeeping quarters.

MATERIAL AND SUPPLIES.

Inventories were taken in all the storehouses of the Quartermaster's Department at the close of the fiscal year 1911. The sum total of the stock on hand was $4,503,643.60, being a decrease of $187,390.50 from the stock on hand at the close of the fiscal year 1910. As, during the fiscal year 1911, nearly $1,000,000 worth of material was taken over from outside departments and the Panama railroad, the total reduction in stock amounted to about $1,200,000.

Supplies during the month were delivered by 30 steamers, the total weight of cargo aggregating 28,065 tons, exclusive of 774,115 feet, board measure, Douglas fir lumber; 135,384 feet, board measure, yellow pine lumber; 111,016 feet, board measure, white oak lumber, and 44,000 cross-ties. The total value of material received during the month was $445,306.12.

Subsistence Department.

The operation of the European laborers' messes, the colored laborers' kitchens, and the line hotels showed a net profit of $2,918.16. The operation of the Hotel Tivoli showed a net profit of $2,920.57, and there was a net profit on restaurants, penitentiary, tugs, and dredges, of $132.11. The net profit on subsistence operations was $5,970.84.

Department of Civil Administration.

COURTS.

During the month 11 civil and 34 criminal cases were disposed of in the Circuit Courts; and 72 civil and 545 criminal cases in the District Courts.

DIVISION OF POSTS, CUSTOMS, AND REVENUES.

Money order sales for July amounted to $407,397.91, and the fees to $1,811.02. Receipts from stamp and card sales, and newspaper postage aggregated $6,010.99. The total collection of revenues made by the division was $17,205.26, and the collection on account of court fines, costs and fees, $2,439.45.

Twenty-nine vessels entered at, and 31 vessels cleared, from the port of Ancon; and 18 vessels entered at, and 21 vessels cleared, from the port of Cristobal.

DIVISION OF POLICE AND PRISONS.

The total number of persons arrested was 561, of whom 494 were men and 67 women. Forty-two nationalities were represented. The total number of arrests for the month was an increase of 89, as compared with June. Nine convicts were committed to the penitentiary, and 13 were discharged, leaving 144 in confinement at the close of the month. The cost of guarding and subsisting the convicts was $3,011.72, and the value of their work on Canal Zone roads $2 703.90

DIVISION OF FIRE PROTECTION.

Thirteen fires were reported in the Canal Zone during the month, as compared with seven in June. The damage to Commission property was $18.50.

DIVISION OF PUBLIC WORKS.

In the city of Panama, the average daily consumption of water was 1,456,113 gallons, and in Colon 921,804 gallons.

The usual inspection and maintenance work of this division was performed during the month.

Department of Sanitation.

The total number of deaths from all causes among employes was 56. These were divided, as follows: From disease, 41, and from violence, 15, giving the annual average per thousand of 10.29 and 3.77, respectively.

The annual average death rate per thousand among employes for the month of July in previous years since American occupation was, as follows:

1904	6.24
1905	31.54
1906	64.71
1907	35.09
1908	14.68
1909	8.10
1910	11.80

The annual average death rate per thousand in the cities of Panama, Colon, and the Canal Zone, including both employes and nonemployes, was 26.53.

The annual average death rate per thousand for the month of July among the same class of population for previous years was, as follows:

1905	58.14
1906	67.72
1907	41.46
1908	29.11
1909	18.29
1910	22.48

Segregating the whites from the blacks, the annual average death rate per thousand from disease among employes was: For whites, 10.37; blacks, 10.27, giving a general average of 10.29. For the same month during 1909, the annual average death rate per thousand from disease was: Whites, 4.13; blacks, 6.65, giving a general average of 6.01; and for the same month during 1910: Whites, 9.51; blacks, 9.16, giving a general average of 9.25.

Among employes during the month, deaths from the principal diseases were, as follows: Nephritis, acute and chronic, 5; lobar pneumonia, 10; hæmoglobinuric fever, 1; malaria fever, E. A., 8; tuberculosis, 4; typhoid fever, 2, leaving a balance of 11 deaths from all other diseases, and 15 deaths from external violence.

Thirty-nine cases of diptheria were reported during the month, 20 from the Canal Zone, 15 from Panama, and 4 from Colon, with four deaths. Generally speaking, the type of the disease continued mild.

One case of bubonic plague was taken from the S. S. *Guatemala* of the Pacific Steam Navigation Company, at the Quarantine station, Culebra Island, on July 24, and the patient is recovering. This person had lived on shore at Callao four days prior to his embarkation, and probably contracted the infection during that time, as he was taken sick two days later.

No cases of yellow fever, smallpox, or plague originated on the Isthmus during the month.

Respectfully,
Geo. W. Goethals, *Chairman.*

Paraiso Pythians.

Paradise Lodge, No. 4, Knights of Pythias, Paraiso, held a "social evening" for members and their families on Thursday, August 17. The newly organized company of the Uniformed Rank has its drill on Friday evenings at the lodge hall. The uniforms and equipment of the company have been received, and the organization has the use of an empty building belonging to the Commission for its armory.

Pilots, Masters, Mates, and Engineers.

A meeting of the Board of Local Inspectors will be held on Wednesday, August 30, at 8 a. m., at the Administration Building, Ancon, at which time applicants for licenses as pilots, masters, mates, or engineers, who have submitted applications on the prescribed form, may appear for examination.

COMMISSION CLUBHOUSES.

Activities of the Young Men's Christian Association.

COROZAL.

On Wednesday, August 16, a "smoker" for men was held in the gymnasium. The program consisted of motion pictures, card tricks by Julius Kersuben of Balboa, and wrestling bouts between Burrell of Cristobal and Meyer of Corozal, Polson and McSparran of Cristobal, and Burrell and Polson of Cristobal. The attendance was about 100.

CULEBRA.

The following high scores were rolled during the week in duckpins: Huttlemaier, 101; Palmer, 103, 105; Mitched, H., 104; Sickler, 105.

The gymnasium classes meet every Monday and Thursday nights from 5.15 to 6 p. m. A gymnasium class for Wednesday nights from 8 to 8.45 will begin its meetings on August 30, in which all classes of gymnastic work will be given. After 8.45, basketball and other games will be played.

A local tournament in volleyball will be organized soon.

EMPIRE.

The following high scores were bowled on the alleys during the past week. Tenpins—Giavelli, 243, 201, 187; Drake, 209; Pinney, 220; Huson, 194, 207; Parkis, 226, 208, 196; Gustavson, 200. Duckpins—Reiman, 101, Pulsifer, 101; Pinney, 113, 107 113, 115; Huson, 105; Danielson, 108; Land, 102.

The Hearons Sisters Concert Company will give a sacred concert on Sunday night, August 27.

On Friday, August 25, under the auspices of the literary and debating society, there will be held an old fashioned spelling bee. The contestants will be chosen from the audience. Both ladies and gentlemen are invited to attend and participate.

The orchestra from the National Conservatory of Music, Panama city, will give the following program at the "open house" on Saturday night, August 26: "Cavalleria Rusticana"; "Blue Danube" waltz; march, from the "Midsummer Night's Dream"; intermezzo; "Adoration"; barcarolle, from the "Tales of Hoffman"; waltz, from "Chocolate Soldier"; closing march.

An order will be sent in soon for new books for the library. Members are requested to leave names of books desired at the desk.

GORGONA.

The hygiene class in connection with gymnasium work was successfully opened on Monday night, August 14, when an informal talk was given by Mr. Hopkins, followed by a discussion by members of the class. These discussions will be held every Monday night preceding the regular gymnasium class, and a different phase of personal care and hygiene will be taken up each time. All men are invited.

A mock trial was held on Thursday night after gymnasium class. This is the second of a series of similar entertainemnts. Refreshments were served.

The pool tournament which recently closed, resulted in a tie of four men: Robitoy, Sherwood, Hill, and Orr. This will be played off before the award is made.

The high bowling scores for the week ending August 26 are, as follows: Duckpins—Duensing, 104, 104, 107; Davis, 104; Dunlop, 100, 104, 101, 118, 108, 101; Davenport, 108; Carlisle, 104; Niles, 103; Haggerty, 117, 103, 102. Tenpins—Haldeman, 209; Lowe, 206; Kenney, 212.

GATUN.

The Ancon bowling team played a second series of games of duckpins at Gatun on Saturday night. Ancon won the first, and Gatun the last two games.

The wrestling class meets once each week. Ten men are now taking lessons under Fred Huber's instructions.

Volleyball games are creating a great deal of interest between divisions of the gymnasium class at its meetings on Tuesday and Friday nights.

CRISTOBAL.

The subject discussed by the literary and debating club on Wednesday night was "Resolved, that John D. Rockefeller is a public benefactor." The affirmative won. The subject for debate on Wednesday night, August 23, will be "Resolved, that United States senators should be elected by direct vote of the people." Affirmative, Messrs. Weaver and Hubbard; negative, Messrs. Cristopherson and Putnam.

On Saturday, August 26, all the boys in the Cristobal boys' department will be taken over to Toro Point, whence they will walk to Fort San Lorenzo.

The gymnasium classes usually held on Thursday will meet on Friday on account of the Hearon Sisters. entertainment on Thursday night.

Mr. Thos. Burns and Dr. W. A. Blackburn have been elected captains of the Cristobal teams in the Isthmian tenpin league.

The following high scores were made during the week ending August 19: Tenpins—Louch, 232, 219, 202; Burn, W., 213; Blackburn, 203; Wallace, 211, 210; Collins, 209, 203, 201; Peterson, 201; Atkins, 205; Rosteck, 202. Duckpins—Wheeler, 112, 111; Hess, 103, 101; Beard, 101.

The bowling games with the Marines from Camp Elliott on August 19 resulted, as follows:

Camp Elliott.				Cristobal.			
Martins	153	150	149	Wallace	130	164	189
Wayman	161	129	150	Wheeler	133	136	149
Swartz	157	180	125	Rosteck	151	202	179
Simpson	139	139	122	Collins	138	189	143
Weigolt	142	125	122	Louch	187	176	156
Total	752	723	668	Total	739	867	816

CAMP ELLIOTT.

On Saturday evening, August 12, the bowling team from Cristobal was defeated by the Marines on the Camp Elliott alleys by the score of 2,223 to 2,354.

OFFICIAL CIRCULARS.

Labor Day.

Culebra, C. Z., August 16, 1911.

Circular No. 401:

Labor Day, Monday, September 4, 1911, will be observed as a holiday throughout the Canal Zone, and, as far as possible, all work will be suspended on that day.

Geo. W. Goethals, *Chairman.*

Rate Authorizations.

Culebra, C. Z., August 21, 1911.

Circular No. 299-n:

A rate of 50 cents an hour is authorized for blacksmiths, boilermakers, car repairers, carpenters (car, house, and ship), machinists, painters, pipefitters, and planing mill hands.

The designation of car repairer at 65 cents an hour is amended to read: "Car repairer, special."

Geo. W. Goethals,
Chairman and Chief Engineer.

Supplies for Canal Work.

The following steamers, with supplies for the Isthmian Canal Commission, arrived at the ports of Cristobal Colon, and Balboa, during the week ending August 19:

Prinz Sigismund, August 13, from New York, with 200 barrels crude carbolic acid, and 91 bales cotton waste for stock.

Peru, August 15 from San Francisco, with 1 case machinery for stock.

Turrialba, August 17, from New Orleans, with 114 pieces white oak lumber, 1,502 bundles yellow pine lumber, 1,189 pieces yellow pine lumber, 34 rolls cotton duck, 401 bales hay, for stock; 756 pieces white oak lumber, 4,319 pieces yellow pine lumber, 100 pieces castings, for Mechanical Division; 9 cases castings for Central Division.

Ancon, August 17, from New York, with 44,950 barrels cement for Atlantic and Pacific Divisions.

Panama, August 18, from New York, with 47 cases babbitt metal, 10 pieces steel beams, 800 pails lubricating grease, 400 bundles shovels, 6 cases stationery, 150 rolls roofing paper, 100 cases sapolio, 20 bales rubber hose, 31 bundles pipe, 30 bundles padboard, 60 kits shellac, for stock; 6 cases rubber boots for Pacific Division; 6 kegs purifier for Atlantic Division; 5 cases steel castings, 6 barrels journal, 6 pieces castings, 31 cases incandescent lamps, for Mechanical Division; 11 barrels blue stone and zincs for Panama Railroad Company; 320 packages drugs and glassware for Sanitary Department; and a miscellaneous cargo, the whole consisting of 2,140 packages, weighing 150 tons.

Tanagra, August 19, from New York, with 25,165 barrels cement for Atlantic and Pacific Divisions.

Band Concert.

A concert will be given by the Isthmian Canal Commission Band at Corozal, C. Z., on Sunday, August 27, 1911, at 7.30 p. m. The program follows:

1. March—*Love of Liberty*	Scouton
2. Selection—*The Girl of My Dreams*	Hoschna
3. Waltz—*Gaite*	Waldteufel
4. Overture—*Fest*	Leutner
5. Intermezzo—*Dawn of Love*	Bendix
6. (*a*) Popular March—*On, Wisconsin*	Purdy
(*b*) Two Step—*Casey Jones*	Newton
7. Idyll—*Garden of Roses*	Pratt
8 Sextet from Lucia	Donizetti
9. Medley Selection—*Headlights*	Schulz
10. March—*Ideal*	Reeves

Charles E. Jennings, *Musical Director.*

The next concert will be given at Gatun, C. Z., on September 3, at 5 p. m.

Found—The person who left a fountain pen at the railroad station in Panama on Sunday, August 13, can obtain the same by addressing W. Jackson, Gatun, giving a description of the pen in question.

COMMISSARY DEPARTMENT.

The open hours at Culebra commissary are from 8 a. m. to 1 p. m., and from p. m. 3 to 7 p. m. All other commissaries are open from 8 a. m. to 1 p. m., and 3 p m. to 7 p. m. with the exception of the Cristobal commissary, which is open from 8 a. m. to 12.30 p. m., and from 2 p. m. to 7 p. m.

Retail prices of cold storage provisions for the week beginning August 22.

FRESH MEATS.	Price.
Mutton—Stewing per pound	6
Shoulder, neck trimmed off, (4 pounds and over), per pound	9
Entire forequarter (not trimmed) 10 pounds and over, per pound	8
Leg (8 to 10 pounds), per pound	17
Cutlets, per pound	18
Short cut chops, per pound	20
Lamb—Stewing, per pound	6
Entire forequarter, neck trimmed off, per pound	9
Leg (5 to 8 pounds), per pound	20
Chops, per pound	24
Cutlets, per pound	24
Veal—Stewing, per pound	10
Shoulder, for roasting (not under 4 pounds), per pound	12½
Chops, shoulder, per pound	16
Chops, per pound	24
Loin, for roasting, per pound	24
Cutlets, per pound	28
Pork—Loin chops or roast, per pound	14
Beef—Suet, per pound	2
Soup, per pound	5
Stew, per pound	8
Corned, No. 1, per pound	12
Corned, No. 2, per pound	10
Chuck roast (3 pounds and over), per pound	12
Pot roast, per pound	12½
Rib roast, second cut (not under 3½ pounds), per pound	16
Rib roast, first cut (not under 3 pounds), per pound	18
Sirloin roast, per pound	19
Rump roast, per pound	19
Porterhouse roast, per pound	20
Steak, chuck, per pound	12½
Round, per pound	13
Rib, per pound	18
Sirloin, per pound	19
Rump, per pound	19
Porterhouse (not less than 1½ pounds), per pound	20
Tenderloin (Western), per pound	24
MISCELLANEOUS.	
Caviare, Russian per tin	47, 89
Livers—Beef, per pound	7
Calf, each	60
Half, each	30
Steak, Hamburger, pkg	13
Sausage—Bologna, per pound	10
Frankfurter, per pound	12
Lieberwurst, per pound	10
Devonshire Farm	17
Sweetbread—Veal, per pound	1.20
Beef, per pound	25
Eggs, fresh, dozen	28
one-half dozen only	15
Bluefish, fresh, per pound	14
Halibut, fresh, per pound	15
Shads, fresh, each	70
Shad roes, fresh, per pair	35
POULTRY AND GAME.	
Chickens—Fancy roasting, milk fed, large, each	1.25
Fancy roasting, milk fed, med., each	1.00
Fancy roasting, corn fed, about 4½ pounds, each	90
Fowls, each ... 60, 70, 80, 90,	1.00
Ducks, Western, about 4½ pounds, each	1.00
Broilers, milk fed, each	60
corn fed, each	55
Turkeys, per pound	26
Squabs, each	35
Capons	2.10
Fryers, corn fed	60
Partridges, each	50
Grouse, each	50
CURED AND PICKLED MEATS.	
Ham—German, Westphalia, per pound	36
Sugar cured, per pound	18
Sliced, per pound	20
Half, for boiling, per pound	19
Boiled, per pound	26
Hocks, per pound	18
Bacon—Breakfast, whole piece, per pound	22
Breakfast, sliced, per pound	23
Pork salt family, per pound	14
Ox Tongues each	1.00
Pig's feet, per pound	9
Tongues, per pound	†18
Sliced bacon in 1-pound tins, per tin	30
In 1-pound jars, per jar	30
DAIRY PRODUCTS.	
Butter—Creamery special, per pound	†32
Cheese—Roquefort, per pound	38
Philadelphia cream, cake	18
Young America, per pound	18
Swiss, per pound	26
Edam, each	1.00
Edam, in tins, tin	25
Neufchatel, cake	6
Gouda, per pound	34

	Price.
Milk (Certified), per bottle	**25
Buttermilk, bottle	**15
Ice cream, quart	‡25
½-gallon	‡50
VEGETABLES AND FRUITS.	
Beets, per pound	*4
Celery, per head	6
Corn, green, per doz	24
Cabbage, per pound	*4
Cucumbers, per pound	*3
Carrots, per lb	4½
Lettuce, per pound	*10
Onions, per pound	5
Potatoes, white, per pound	4½
sweet, per pound	2
Pears, Alligator, each	6
Peppers, green, per lb	7
Rhubarb, per pound	3
Turnips, per lb	4
Yams, per pound	3
Apples, per lb	10
Cantaloupes, each	*8
Lemons, dozen	24
Limes, per 100	80
Oranges, California, per dozen	42
Pears, per lb	8
Peaches, per lb	10
Plums, per lb	9
Watermelons, each	30

*Indicates reduction from last list.

**Indicates 5 cents allowed for return of bottle.

†Indicates advance on last list.

‡Sold only from commissaries; no orders taken for delivery.

Rainfall from August 1 to 19, 1911, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section.	Ins.		Ins.
Ancon	1.94	12	4.98
Balboa	2.49	12	6.12
*Miraflores	1.09	1	3.40
Pedro Miguel	1.15	9	3 41
Rio Grande	2.13	2	4.97
Central Section—			
Culebra	1.12	6	4.25
*Camacho	1.46	2	4.71
Empire	.65	6	2.70
Gamboa	.58	7	2.78
*Juan Mina	1.52	5	4.47
Alhajuela	1 07	1	6.84
*El Vigia	1.49	19	8.65
*Gorgona	1 05	2	4.33
San Pablo	1.66	15	3.88
Tabernilla	2.13	15	4.70
Bohio	.85	1	2.88
*Monte Lirio	2.11	15	5.13
Atlantic Section—			
Gatun	1.26	14	2.93
*Brazos Brook	4.25	14	6.70
Cristobal	4.27	14	7.44
Porto Bello	4.27	13	†14.80
*Nombre de Dios	1.98	13	6.31

*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight. †To 5 p. m., August 18.

Stages of the Chagres.

Maximum heights of the Chagres River for the week ending midnight, Saturday, August 19, 1911. All heights are in feet above mean sea level.

DAY AND DATE.	STATION.				
	Vigia.	Alhajuela	Gamboa.	Bohio.	Gatun Lake.
Sun., Aug. 13	127.3	93.5	46.5	14.0	14.0
Mon., Aug. 14	126.3	92.8	45.8	14.0	13.9
Tues., Aug. 15	126.6	93.2	46.3	14.2	14.1
Wed., Aug. 16	127.0	93.3	46.1	14.4	14.3
Thurs., Aug. 17	131.3	96.3	49.2	15.0	14.5
Fri., Aug. 18	127.0	93.7	47.8	15.0	14.6
Sat., Aug. 19	129.8	95.4	48.4	14.7	14.6
Height of low water	125.0	92.0	44.0		

Tide Table.

The following table shows the time of high and low tides at Panama for the week ending August 30, 1911. (75th meridian time):

DATE.	Low.	High.	Low.	High.	Low.
	A.M.	A.M.	A.M.	P.M.	P.M.
August 24	......	3.30	9.45	3.48	10.08
August 25	......	4.16	10.32	4.36	10.52
August 26	......	5.00	11.15	5.20	11.36
August 27	......	5.43	12m.	6.04	......
			P.M.		
August 28	12.20	6.24	12.43	6.45	......
August 29	1.01	7.03	1.26	7.26	......
August 30	1.43	7.45	2.12	8.10	......

MOVEMENT OF OCEAN VESSELS.

The following is a list of the sailings of the Panama Railroad Steamship Company; of the Royal Mail Steam Packet Company; of the Hamburg-American Line, and of the United Fruit Company's Line; the Panama Railroad Company's dates being subject to changes

NEW YORK TO CRISTOBAL.

Advance	P. R. R.	Friday	Aug. 18
Colon	P. R. R.	Thursday	Aug. 24
Allianca	P. R. R.	Wednesday	Aug. 30
Panama	P. R. R.	Tuesday	Sept 5
Advance	P. R. R.	Monday	Sept. 11
Colon	P. R. R.	Monday	Sept. 18
Allianca	P. R. R.	Saturday	Sept. 23
Panama	P. R. R.	Friday	Sept. 29
Advance	P. R. R.	Thursday	Oct. 5
Colon	P. R. R.	Thursday	Oct. 12
Allianca	P. R. R.	Wednesday	Oct. 18
Panama	P. R. R.	Tuesday	Oct. 24

CRISTOBAL TO NEW YORK.

Panama	P. R. R.	Thursday	Aug. 24
Ancon	P. R. R.	Friday	Aug. 25
Advance	P. R. R.	Wednesday	Aug. 30
Colon	P. R. R.	Tuesday	Sept. 5
Allianca	P. R. R.	Monday	Sept. 11
Panama	P. R. R.	Sunday	Sept. 17
Advance	P. R. R.	Saturday	Sept. 23
Colon	P. R. R.	Saturday	Sept. 30
Allianca	P. R. R.	Friday	Oct. 6
Panama	P. R. R.	Thursday	Oct. 12
Advance	P. R. R.	Tuesday	Oct. 17
Colon	P. R. R.	Tuesday	Oct. 24
Allianca	P. R. R.	Monday	Oct. 30
Panama	P. R. R.	Sunday	Nov. 5

NEW YORK TO COLON.

Zacapa	U. F. C.	Thursday	Aug. 17
Prinz Eitel Friedrich	H.-A.	Friday	Aug. 18
Almirante	U. F. C.	Thursday	Aug. 24
Prinz Aug. Wilhelm	H.-A.	Saturday	Aug. 26
Santa Marta	U. F. C.	Thursday	Aug. 31
Prinz Sigismund	H.-A.	Friday	Sept. 1
Oruba	R. M.	Saturday	Sept. 2
Metapan	U. F. C.	Thursday	Sept. 7
Prinz Joachim	H.-A.	Saturday	Sept. 9
Zacapa	U. F. C.	Thursday	Sept. 14
Prinz Eitel Friedrich	H.-A.	Friday	Sept. 15
Magdalena	R. M.	Saturday	Sept. 16
Almirante	U. F. C.	Thursday	Sept. 21
Prinz Aug. Wilhelm	H.-A.	Saturday	Sept. 23
Santa Marta	U. F. C.	Thursday	Sept. 28

COLON TO NEW YORK.

Metapan	U. F. C.	Thursday	Aug. 24
Prinz Joachim	H.-A.	Tuesday	Aug. 29
Zacapa	U. F. C.	Thursday	Aug. 31
Prinz Eitel Friedrich	H.-A.	Saturday	Sept. 2
Magdalena	R. M.	Tuesday	Sept. 5
Almirante	U. F. C.	Thursday	Sept. 7
Prinz Aug. Wilhelm	H.-A.	Tuesday	Sept. 12
Santa Marta	U. F. C.	Thursday	Sept. 14
Prinz Sigismund	H. A.	Saturday	Sept. 16
Clyde	R.M.	Tuesday	Sept. 19
Metapan	U. F. C.	Thursday	Sept. 21
Prinz Joachim	H.-A.	Tuesday	Sept. 26
Zacapa	U. F. C.	Thursday	Sept. 28
Prinz Eitel Frederich	H. A.	Saturday	Sept. 30

NEW ORLEANS TO COLON.

Abangarez	U. F. C.	Saturday	Aug. 19
Atenas	U. F. C.	Saturday	Aug. 26
Turrialba	U. F. C.	Saturday	Sept. 2
Abangarez	U. F. C.	Saturday	Sept. 9
Atenas	U. F. C.	Saturday	Sept. 16
Turrialba	U. F. C.	Saturday	Sept. 23

COLON TO NEW ORLEANS.

Turrialba	U. F. C.	Thursday	Aug. 24
Abangarez	U. F. C.	Thursday	Aug. 31
Atenas	U. F. C.	Thursday	Sept. 7
Turrialba	U. F. C.	Thursday	Sept. 14
Abangarez	U. F. C.	Thursday	Sept. 21
Atenas	U. F. C.	Thursday	Sept. 28

Hamburg-American steamers leave Colon for New York via Kingston at 10 a. m. on sailing dates. The *Prinz August Wilhelm* and *Prinz Joachim* call at Santiago de Cuba, on both outward and homeward voyages.

The Leyland line steamer *Etonian* sails for Port Limon and Galveston on, or about, August 26.

Royal Mail steamers leave for New York on alternate Tuesdays, at 10 a. m.; for Southampton on alternate Tuesdays at 10 a. m.

United Fruit Company's ships for New Orleans direct leave on Thursdays at 3 p. m.; ships for New York via Kingston on Thursdays at 11 a. m.; for Bocas del Toro on Mondays at 6 p. m.

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